Acer Altos R500

User's guide

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Record the model number, serial number, purchase date, and place of purchase information in the space provided below. The serial number and model number are recorded on the label affixed to your computer. All correspondense concerning your unit should include the serial number, model number, and purchase information.

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Model Number : ___________________________________

Serial Number: _____________________________________

Purchase Date: _____________________________________

Place of Purchase: __________________________________

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Notices

FCC notice

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the device and receiver
- Connect the device into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help

Notice: Shield cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this equipment. Operation with noncertified peripherals is likely to result in interference to radio and TV reception.

Caution! Changes or modifications not expressly approved by the manufacturer could void the user’s authority, which is granted by the Federal Communications Commission, to operate this computer.

Use conditions

This part complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice: Canadian users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Remarque à l’intention des utilisateurs canadiens

Cet appareil numérique de la classe B respected toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Important safety instructions

Read these instructions carefully. Save these instructions for future reference.

1. Follow all warnings and instructions marked on the product.
2. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use this product near water.
4. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
5. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
6. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

7 Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

8 If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

9 Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

10 Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

11 Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

  a When the power cord or plug is damaged or frayed

  b If liquid has been spilled into the product

  c If the product has been exposed to rain or water

  d If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

  e If the product has been dropped or the cabinet has been damaged

  f If the product exhibits a distinct change in performance, indicating a need for service.

12 Replace the battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.

13 Warning! Batteries may explode if not handled properly. Do not disassemble or dispose of them in fire. Keep them away from children and dispose of used batteries promptly.

14 Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SPT-2, rated 7A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

Laser compliance statement

The CD-ROM drive in this computer is a laser product. The CD-ROM drive's classification label (shown below) is located on the drive.

CLASS 1 LASER PRODUCT
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

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1 System overview

The Acer Altos R500 is a 1U, high-density, rackmountable dual-processor system loaded with a host of new and innovative features. The system offers a new standard for flexible productivity ideal for local or wide area networks and multiuser server environments.

Overview

The Acer Altos R500 system is a PCI bus based dual processor system built on an extended ATX baseboard. It comes with two socket 370 processor slots utilizing two Intel® Coppermine-T or Tualatin® processors integrated with the Server Works RCC chipset. The dual-channel SCSI architecture supports Ultra 160/m SCSI with bandwidth of up to 160 MB/s for each channel. The mainboard also integrates the Intel® 82550 10/100 Mbps PCI Ethernet chipset that supports WOL (Wake on LAN) for better remote site management.

For expandability, the system includes two 64-bit/66 MHz PCI bus slots and four DIMM slots that allow memory installation up to a maximum of 4 GB.

For connectivity, the mainboard provides two USB (Universal Serial Bus) connectors, PS/2 interface for both mouse and keyboard, one UART serial port, and four LAN ports.

For its storage features, Altos R500 supports one slim-type CD-ROM drive, one slim-type floppy disk drive and three hot-swappable SCSI hard disk drive.

The system is fully compatible with MS-DOS V6.X, Novell Netware, SCO UNIX Openserver SCO, Unixware, Red Hat Linux 6.X., Sun Solaris, Windows NT 4.0 and Windows 2000 Professional.

Processors

The Intel Tualatin processor implements Dynamic Execution performance, a multi-transaction system bus, and Intel MMX media enhancement technology. It also offers Streaming SIMD (Single Instruction Multiple Data) Extensions - 70 new instructions enabling advanced imaging, 3D, streaming audio and video, and speech recognition applications. With its on-die 512-KB level two (L2) cache implementing the Advanced Transfer Cache Architecture, the Tualatin processor delivers higher performance than previous Pentium processors while maintaining binary compatibility with all previous Intel Architecture processors.

The mainboard supports 100 or 133 MHz GTL+ host bus frequencies for Tualatin processors running at 1 GHz and above.

Memory

The four DIMM sockets on board accept using 64-, 72-, 128-, 144-, 512-MB and 1-GB SDRAM (synchronous DRAM) DIMMs for a maximum memory upgrade capacity of up to 4 GB. For data integrity, the default setting of the ECC (error-correcting code) function of the memory system in BIOS is enabled. See “Memory/Cache Options” on page 87 for more on this BIOS setting.

Note: The SDRAM should work under 3.3 volts only; 5-volt memory devices are not supported.

The mainboard supports both 200 and 266 MHz SDRAM DIMMs (PC-1600 and PC-1200).

System chipsets

Server Works RCC chipset

The Server Works RCC chipset was specifically designed to meet the needs of high performance systems. It consists of following components:

- HE-SL-T (north bridge) provides the host interface, memory system control interface and PCI interface.
- CIOB2 (I/O bridge) is a peripheral chip that performs PCI bridging function between the hub interface and the PCI bus. It can provide arbitration support for six PCI devices and manage 2 x 66 Mhz PCI slots.
- CSB5 (south bridge) integrates LPC interface and super I/O functions like keyboard and mouse interface, floppy disk controller, advanced digital data separator, serial port, on-chip 12 mA AT bus drivers, one floppy direct drive support, and Intelligent Power Management (IPM) support.

SCSI subsystem

The dual-channel AIC-7899 single-chip host adapter delivers Ultra 160/m SCSI data transfer rates which double the Ultra-2 SCSI data transfer rate of up to 160 MByte/s. With two channels, it delivers a total of 320 MByte/s bandwidth. In addition, the AIC-7899 features a 66 MHz, 64-bit PCI interface that supports zero wait-state memory which also operates on 33 MHz, 32-bit PCI buses. It supports up to 15 devices on a 12-meter cable (or 25 meters in a point-to-point configuration), making it ideal for both clustering and RAID configurations.

LAN subsystem

Another cost-effective feature for network solution is the integration of four Intel 82550 10/100 Mbps Fast Ethernet controllers. With its sophisticated 32-bit PCI component and enhanced scatter-gather bus mastering capabilities, it enables high-level command processing and multiple operations which lowers CPU utilization. It also offers several new features including:

- IPSec integration
- Host side cardbus interface
- Enhanced power management
- Optimized support for flash devices and modem combination interface
- Auto-Negotiation capability

Video subsystem

The ATI Rage XL harbors 2D and 3D display capabilities that bring life to any multimedia and work applications. It also supports hardware DVD decoding. With remarkable color depths and high resolutions of up to 1600 x 1200 it enhances every visual experience on your system.

The onboard ATI Rage XL chipset comes with 2 MB VRAM (video RAM) and supports up to 1024 x 768 display mode at high colors.

Expansion slot

PCI bus

The mainboard has two 64-bit/66 MHz PCI bus slot with a riser card.

Hardware management support

The mainboard supports a power management function that conforms to the power saving standards of the U.S. Environmental Protection Agency (EPA) Energy Star program. It also offers Plug-and-Play feature which helps save users from configuration problems, thus making the system more user-friendly.

Additional features include hardware support for ASM Pro (Advanced System Manager Pro) and RDM (Remote Diagnostic Management). ASM detects problems in the CPU thermal condition, CPU working voltage detection (±12V/±5V/3.3V/1.5V), and PCI bus utilization calculation. It also detects if the CPU fan or the chassis fan malfunctions. Meanwhile, RDM allows execution of the RDM diagnostic program from a remote RDM station to fix detected problems or to reboot the system.

Features summary

The system has the following major components:

- FC-PGA (Flip-Chip Pin Grid Array) 370 processor socket that supports Intel Coppermine DO Stepping or Tualatin processors processor running at 1/133 to 1.26/133 MHz and future generations of Pentium CPUs
- Server Works RCC chipset which includes the north, south and I/O bridge
- SCSI controller Adaptec AIC-7899 chipset supports dual channel 64-bit LVD Ultra 160/m device connection in 64-bit/66 MHz PCI bus:
  - Channel A- one 68-pin Ultra160 SCSI connector
  - Channel B- one 68-pin Ultra160 SCSI connector
- Onboard 10/100 Mbp/s Intel 82550 LAN chip that supports WOL
- Four DIMM sockets that accept 64-, 72-, 128-, 144-, 256-, and 512-MB and 1-GB SDRAM (synchronous DRAM) DIMMs for a maximum memory upgrade capacity of 4 GB
- Storage support for:
  - One slim-type CD-ROM drive
  - One slim-type floppy disk drive
  - Three hot-swappable SCSI hard disk drive
- Two 64-bit/66 MHz PCI slot
- NS PC87417 Super I/O chipset
- ATI Rage XL video chipset
- System clock/calendar with battery backup
- Auxiliary power connector for ATX power supply
- Advanced Server Management (ASM) and Remote Diagnostic Management (RDM) controller chipsets
- External ports:
  - 2 USB ports
  - PS/2-compatible keyboard port
  - PS/2-compatible mouse port
  - 1 serial port
  - 4 LAN ports (RJ-45)
  - Monitor/video port

Weight

The table below lists the weight of individual components used in deployment of this system in third-party racks.

Item	Weight in Kg	Weight in lbs
Fully configured system	13 Kg	28.6 lbs
Rack mount kit	3.1 Kg	6.82 lbs
CPU and fan sink	0.35 Kg	0.77 lbs
Hard disk drive	1Kg	2.2 lbs
Power supply module	1.3 Kg	2.86 lbs
Floppy disk drive	0.16 Kg	0.35 lbs
CD-ROM drive	0.3 Kg	0.66 lbs
PCI card	0.04 ~ 0.4 Kg	0.09 ~ 0.88 lbs

Power consumption

The server power supply is rated for a maximum 220W DC output. Maximum input AC power consumption is approximately _____.

- Using 110V AC power, a fully loaded system can consume up to 2.80A
- Using 220V AC power, a fully loaded system can consume up to 1.40A

Deployment of ultra-dense 1U servers represent a significant power requirement. A simple formula to calculate server power requirements for an installation is:

(Number of servers) x (307W) = maximum power requirements for servers

Thermal dissipation

The server has the following cooling systems:

- Two 9-cm CPU fan blowers
- One rear chassis fan

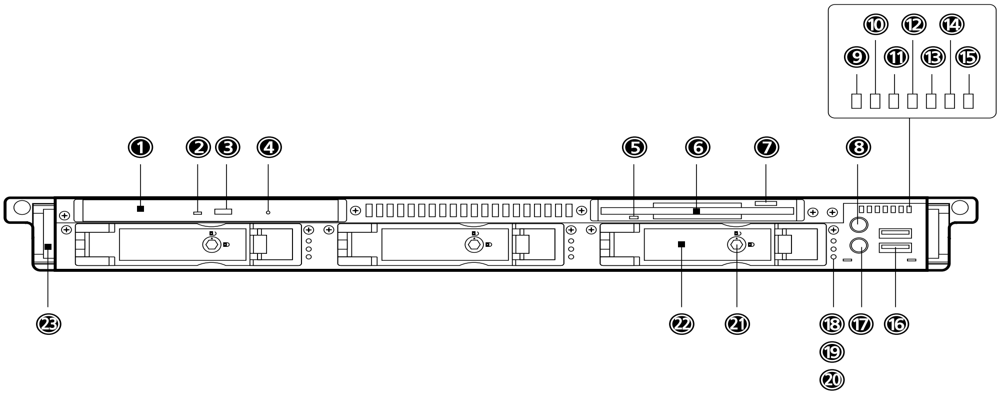
A fully configured Altos R500 server under maximum workload can produce approximately 1047 BTU/hr. Air temperature measurements around the server may vary as much as 25°C (45°F) from front to back. Deployment of multiple ultra-dense servers will produce a significant amount of heat. For example, 42 servers under maximum workload can generate as much as 43,974 BTU/hr.

2 System tour

This chapter discusses the features and components of your computer.

External and internal structure

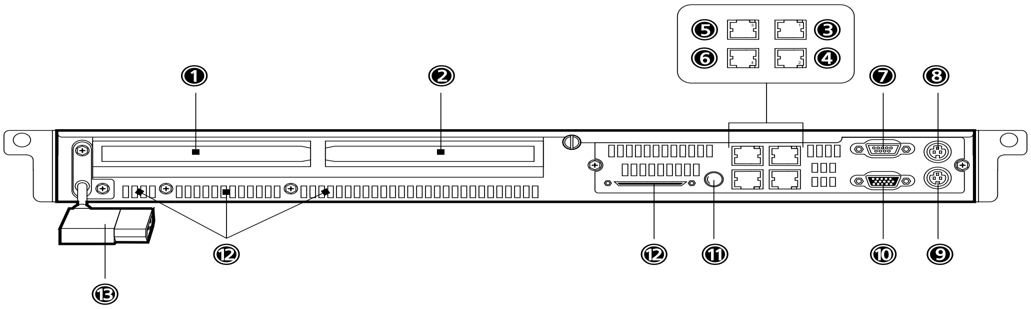
Front panel



No.	Icon	Description
1		Slim type CD-ROM drive emergency eject hole
2		Slim type CD-ROM drive indicator
3		Slim type CD-ROM drive eject button
4		Slim type CD-ROM drive
5		Slim type floppy drive indicator
6		Slim type floppy drive
7		Slim type floppy drive eject button
8		Service ID button
9	💡	Power indicator
10	!	System health indicator
11	🖧	LAN 1 access indicator

No.	Icon	Description
12	🖧 2	LAN 2 access indicator
13	🖧 3	LAN 3 access indicator
14	🖧 4	LAN 4 access indicator
15	🔧	Service ID indicator
16	⭠	USB ports (2 ports, black)
17	⏻	Power button
18	💡	Hard disk power indicator
19	🛢	Hard disk activity indicator
20	▨	Hard disk error indicator
21		Drive tray lock
22		Drive tray
23		Metal handle

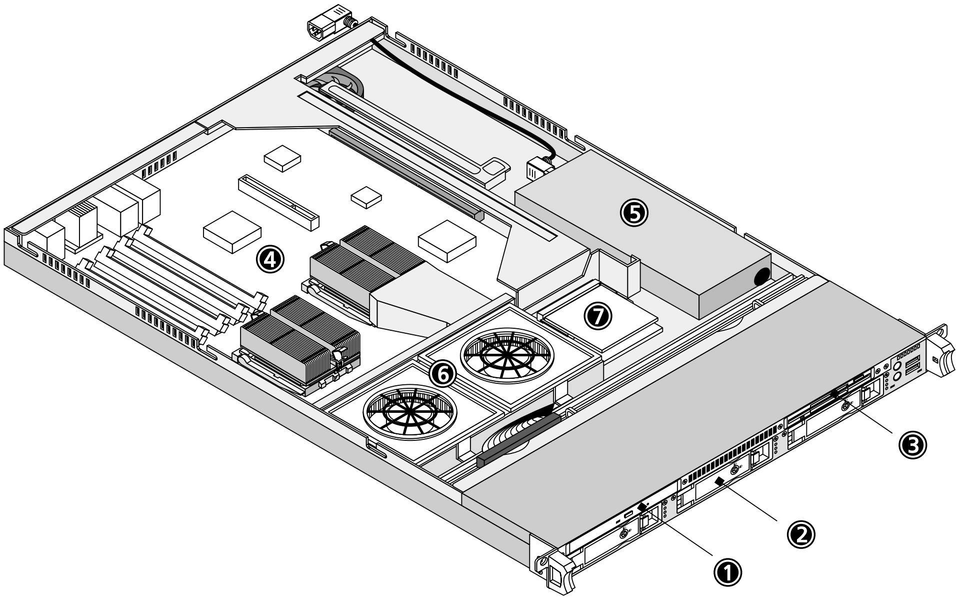
Rear panel



No.	Icon	Color	Description
1			Add-on card bracket 1
2			Add-on card bracket 2
3	🖧 1		LAN 1 port (RJ-45)
3	🖧 2		LAN 2 port (RJ-45)
5	🖧 3		LAN 3 port (RJ-45)
6	🖧 4		LAN 4 port (RJ-45)
7	IOIOI	Teal or turquiose	Serial port
8	🖱	Green	PS/2 mouse port
9	⌨	Purple	PS/2 keyboard port
10	🖥	Blue	Monitor/VGA port
11			Service indicator button
12			Very high density SCSI connector
13			Power cable socket

No.	Icon	Color	Description
14			Ventilation

Internal components



No.	Item
1	Slim type CD-ROM drive
2	Hot-swappable SCSI hard disk drive
3	Slim type floppy drive
4	Mainboard
5	Power supply
6	Housing fans
7	Raptor card (optional)

Disk drives

Your system comes with the following disk drives:

Hard disk drive

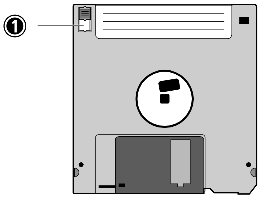
Your system provides three hot-swappable SCSI hard disk drive trays with SCSI connector card.

3.5-inch floppy disk drive

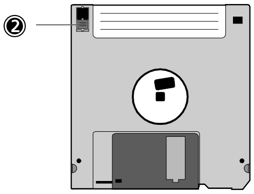
Your system's 3.5-inch slim-type floppy disk drive can handle 1.44- and 2.88-MB capacity diskettes.

Floppy diskettes are compact, lightweight, and easy to carry around. Here are some tips on how to take care of your diskettes:

- Always make backup copies of the diskettes that contain important data or program files.
- Keep diskettes away from magnetic fields and sources of heat.
- Avoid removing a diskette from the floppy drive when the drive activity indicator is on.
- Write-protect your diskettes to prevent accidental erasure. To do this, slide the write-protect tab to the write-protect position (1).



Sliding the write-protect tab to the not-write-protect position (2) will allow you to store and modify data in your diskettes.



- When you put a label on a 3.5-inch diskette, make sure that the label is properly attached (flat on the surface) and within the labeling area (area with a slight surface depression) on the diskette. An improperly attached label may cause a diskette to get stuck in the floppy drive when you are inserting or removing it.

CD-ROM drive

Your system comes with a slim-type CD-ROM drive. This drive is located on the front panel of your system. The CD-ROM drive allows you to play different types of compact discs (CDs) and video CDs.

CDs, like diskettes, are also compact, lightweight, and easy to carry around. However, they are more delicate than diskettes and must be handled with extra care.

To insert a CD into your system's CD-ROM drive:

1. Gently push the eject button located on the front panel.
2. When the disc tray slides open, insert the CD. Make sure that the label or title side of the disc is facing upward.

   Caution! Hold the disc by the edges to avoid leaving smudges or fingerprints.

3. Push the eject button again to close the tray.

Ejecting the CD tray

- To eject the CD or DVD tray when the computer is turned on, press the CD-ROM drive eject button
- To eject the CD or DVD tray when the computer is turned off, insert the tip of a pen or a paperclip into the emergency eject hole to pop out the tray.

To take care of your CDs:

- Keep your discs in a disk case when not in use to avoid scratches or other damage. Any kind of dirt or damage can affect the data on the disc, impair the disc lens reader on the CD-ROM drive, or stop the system from successfully reading the disc.
- When handling discs, always hold them by the edges to avoid smudges or fingerprints.
- When cleaning discs, use a clean, dust-free cloth and wipe in a straight line from the center to the edge. Do not wipe in a circular motion.
- Clean your CD-ROM drive periodically. You may refer to a cleaning kit for instructions. Cleaning kits can be purchased in any system or electronics shop.

3 Setting up your system

This chapter contains step-by-step instructions on how to set up your system.

Preinstallation requirements

Selecting a site

Before unpacking and installing the system, select a suitable site for the system for maximum efficiency. Consider the following factors when choosing a site for the system:

- Near a grounded power outlet
- Clean and dust-free
- Sturdy surface free from vibration
- Well-ventilated and away from sources of heat
- Secluded from electromagnetic fields produced by electrical devices such as air conditioners, radio and TV transmitters, etc.

Checking the package contents

Check the following items from the package:

- Acer Altos R500 system
- Acer Altos R500 User's guide
- CD-ROM driver kit
- One front bezel for rackmount installation
- Two additional CPU fan sinks

If any of the above items are damaged or missing, contact your dealer immediately.

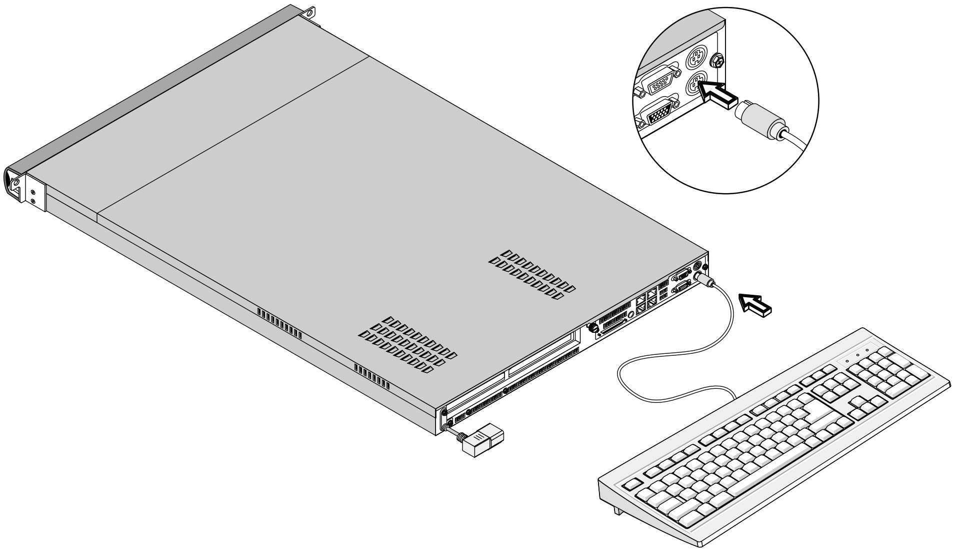
Save the boxes and packing materials for future use.

Basic connections

The system unit, PS/2 keyboard, PS/2 mouse, and monitor constitute the basic system. Before connecting any other peripherals, connect these peripherals first to test if the system is running properly.

Connecting the PS/2 keyboard

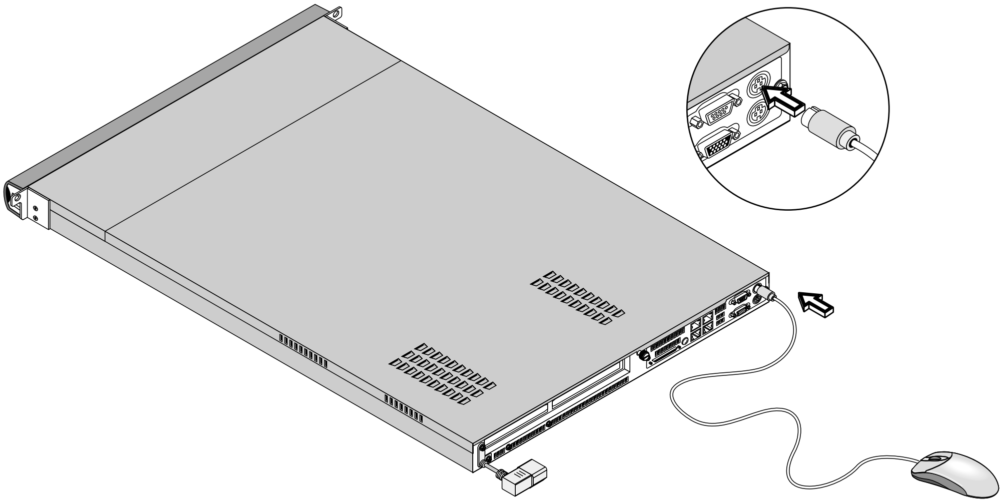
Plug the PS/2 keyboard cable into the PS/2 keyboard port ⌨ (purple port) located on the rear panel of your system.



Note: If you are using a USB keyboard, plug the mouse cable into either USB ports located on the front panel of your system.

Connecting the PS/2 mouse

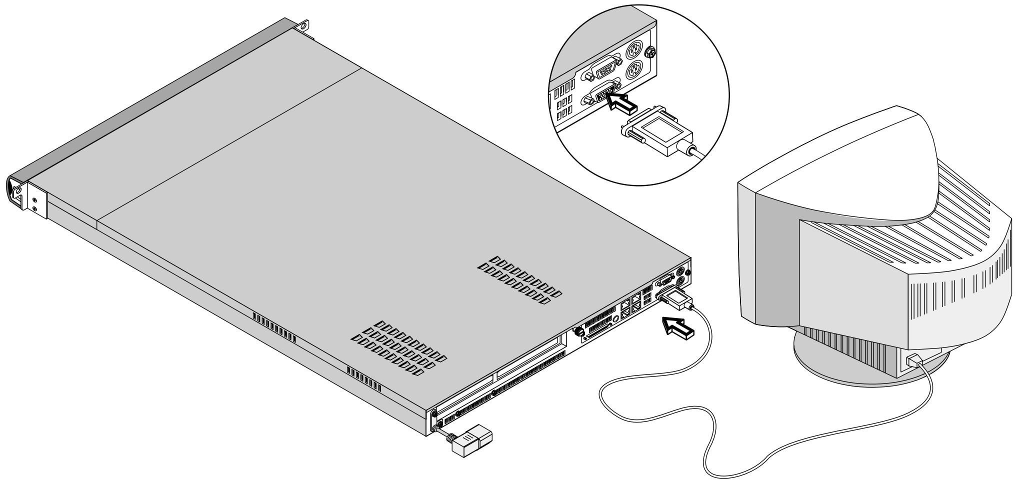
Plug the PS/2 mouse cable into the PS/2 mouse port 🖱 (green port) located on the rear panel of your system



Note: If you are using a USB mouse, plug the mouse cable into either USB ports located on the front panel of your system.

Connecting the VGA monitor

To connect the VGA monitor, simply plug the monitor cable into the monitor/VGA port 🖵 (blue port) located on the rear panel of your system.



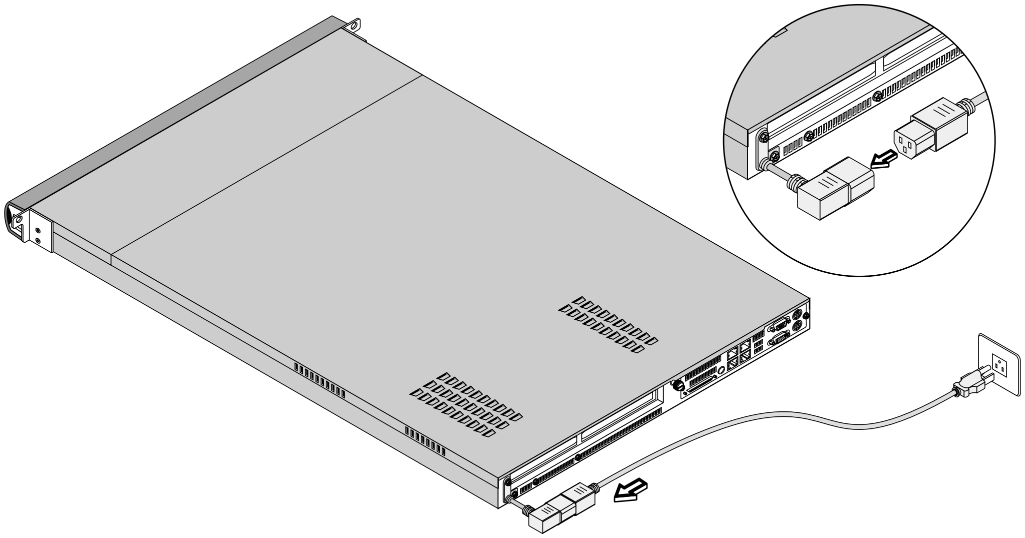
Connecting to the network

You can connect your computer to a Local Area Network (LAN) using a network cable. To do so, simply plug the network cable into any of the four network ports 🖧 (black port) located on the rear panel of your system.

Note: Consult your operating system manual for information on how to configure your network setup.

Connecting the power cable

Plug the power cable into the power cable socket located on the rear panel of your system. Then plug the other end of the power cable into a power outlet. The figure below shows a complete connection of the whole system.



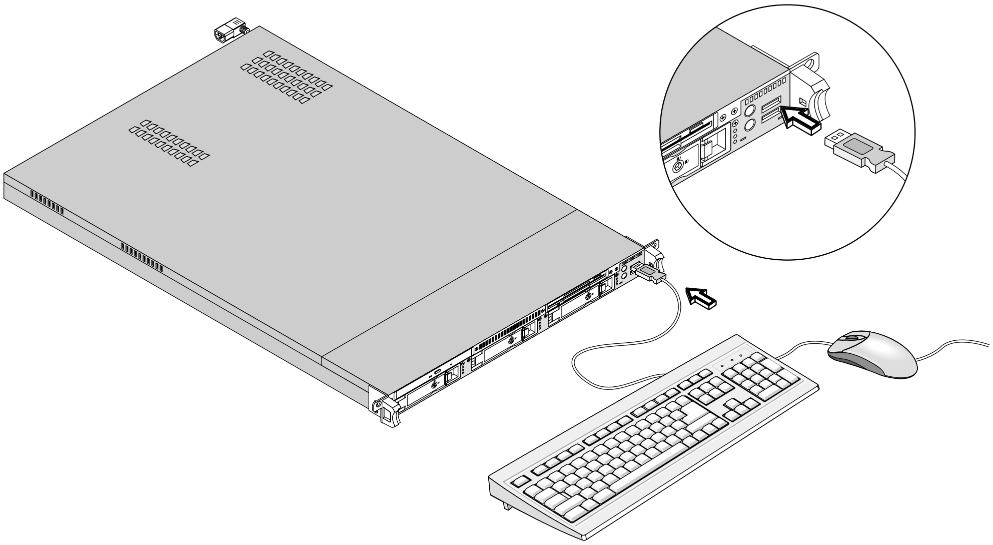
Connecting option

USB devices

Universal Serial Bus (USB) is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12 Mbps) such as a keyboard, mouse, joystick, scanner, printer and modem. With USB, complex cable connections can be eliminated.

Your system comes with two USB ports located on the front panel. These ports allow you to connect additional serial devices to your system without using up its system resources.

To connect a USB device, simply plug the device cable into either USB ports ⭠ (black port) located on the front panel of your system.



Note: Most USB devices have a built-in USB port which allows you to daisy-chain other devices.

Turning on your system

After making sure that you have set up the system properly and connected all the required cables, you can now power on your system.

To power on the system, press the power button on the front panel. The system starts up and displays a welcome message. After that, a series of power-on self-test (POST) messages appears. The POST messages indicate if the system is running well or not.

Note: If the system does not turn on or boot after pressing the power button, go to the next section for the possible causes of the boot failure.

Aside from the POST messages, you can determine if the system is in good condition by checking if the following occurred:

- Power indicator on the front bezel lights up (green)
- Power, Num Lock, and Caps Lock indicators on the keyboard light up

Power-on problems

If the system does not boot after you have applied power, check the following factors that might have caused the boot failure.

- The external power cable may be loosely connected.

  Check the power cable connection from the power source to the power cable socket on the rear panel. Make sure that the cable is properly connected to the power source and to the power cable socket.

- No power comes from the grounded power outlet.

  Have an electrician check your power outlet.

- Loose or improperly connected internal power cables.

  Check the internal cable connections. If you are not confident to perform this step, ask a qualified technician to assist you.

  Warning! Make sure all power cords are disconnected from the electrical outlet before performing this task.

  Note: If you have gone through the preceding actions and the system still fails to boot, ask your dealer or a qualified technician for assistance.

Turning off your system

To turn off your computer, on the Windows taskbar click on the **Start** button, point to **Shut Down...**, select **Shut down** from the dropdown window then click on **OK**. You can then turn off all peripherals connected to your computer.

If you cannot shut down your computer, press the power button for at least four seconds. Quickly pressing the button may put the computer in a Suspend mode only.

4 Upgrading your system

This chapter contains basic information about your system boards that you will find helpful when performing the instructions of the upgrade process which are also discussed in this chapter.

Installation precautions

Before you install any system component, we recommend that you read the following sections. These sections contain important ESD precautions along with preinstallation and post-installation instructions.

ESD precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other components. Always observe the following precautions before you install a computer component:

1. Do not remove a component from its protective packaging until you are ready to install it.
2. Wear a wrist grounding strap and attach it to a metal part of the computer before handling components. If a wrist strap is not available, maintain contact with the computer throughout any procedure requiring ESD protection.

Preinstallation instructions

Always observe the following before you install any component:

1. Turn off your system and all the peripherals connected to it.
2. Unplug all cables from the power outlets.
3. Open your system according to the instructions on page 35.
4. Follow the ESD precautions described above when handling a computer component.
5. Remove any expansion board(s) or peripheral(s) that block access to the DIMM socket or other component connector.

See the following sections for specific installation instructions on the component you wish to install.

Warning! Failure to properly turn off the computer before you start installing components may cause serious damage.
Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Post-installation instructions

Observe the following after installing a computer component:

1. See to it that all components are installed according to the described step-by-step instructions.
2. Replace any expansion board(s) or peripheral(s) that you have previously removed.
3. Connect the necessary cables.
4. Replace the system cover.
5. Turn on the system.

Opening your system

Caution: Before you proceed, make sure that you have turned off your system and all peripherals connected to it. Read the “Preinstallation instructions” on page 35.

Warning! DO NOT attempt the procedures in the following sections unless you are confident of your capability to perform them. Otherwise, ask a service technician for assistance.

Removing the system cover

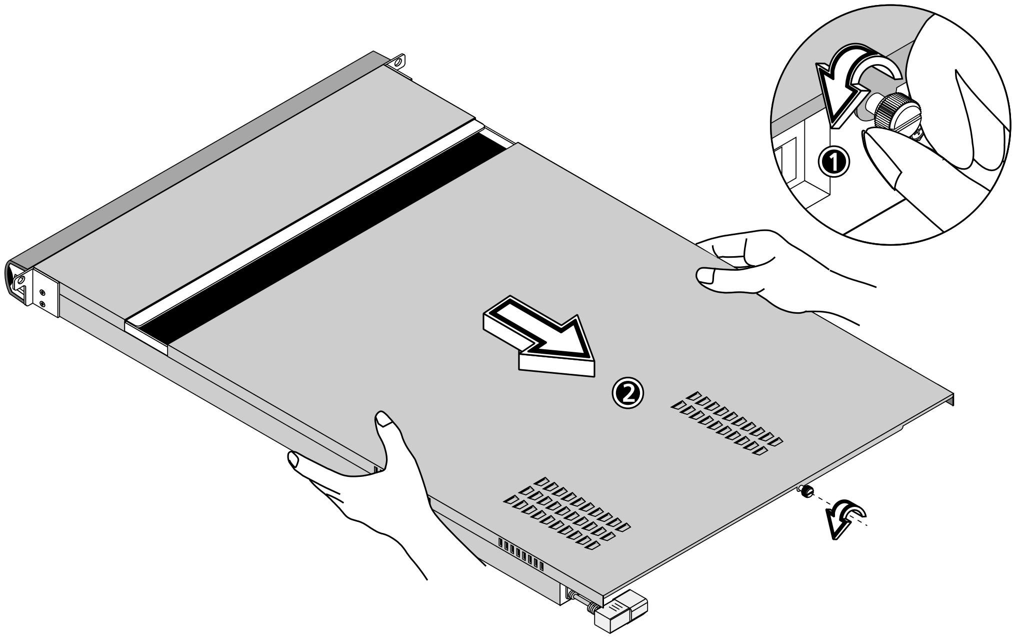
You need to open your system before you can install additional components.

1 Turn off the power to the system unit and unplug all cables.

2 Place your system unit on a flat, steady surface.

3 Turn the thumbscrew counterclockwise with your fingers to release the cover.

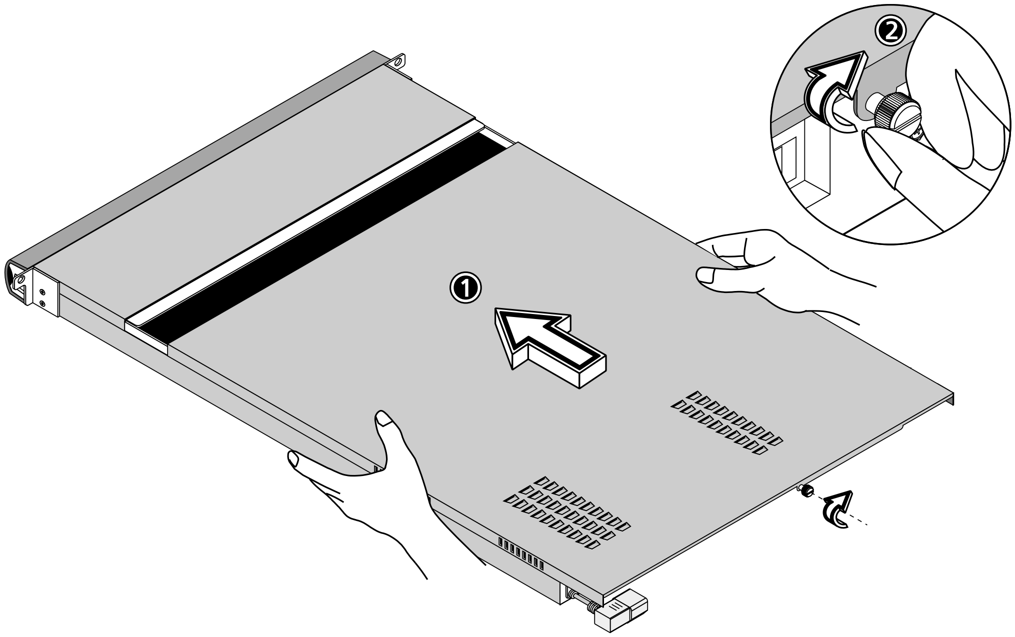
4 Hold the cover with both hands and gently pull back the cover to detach it from the housing.



Replacing the system cover

1 Align the cover to the housing frame and then push it back in to slide it back into place.

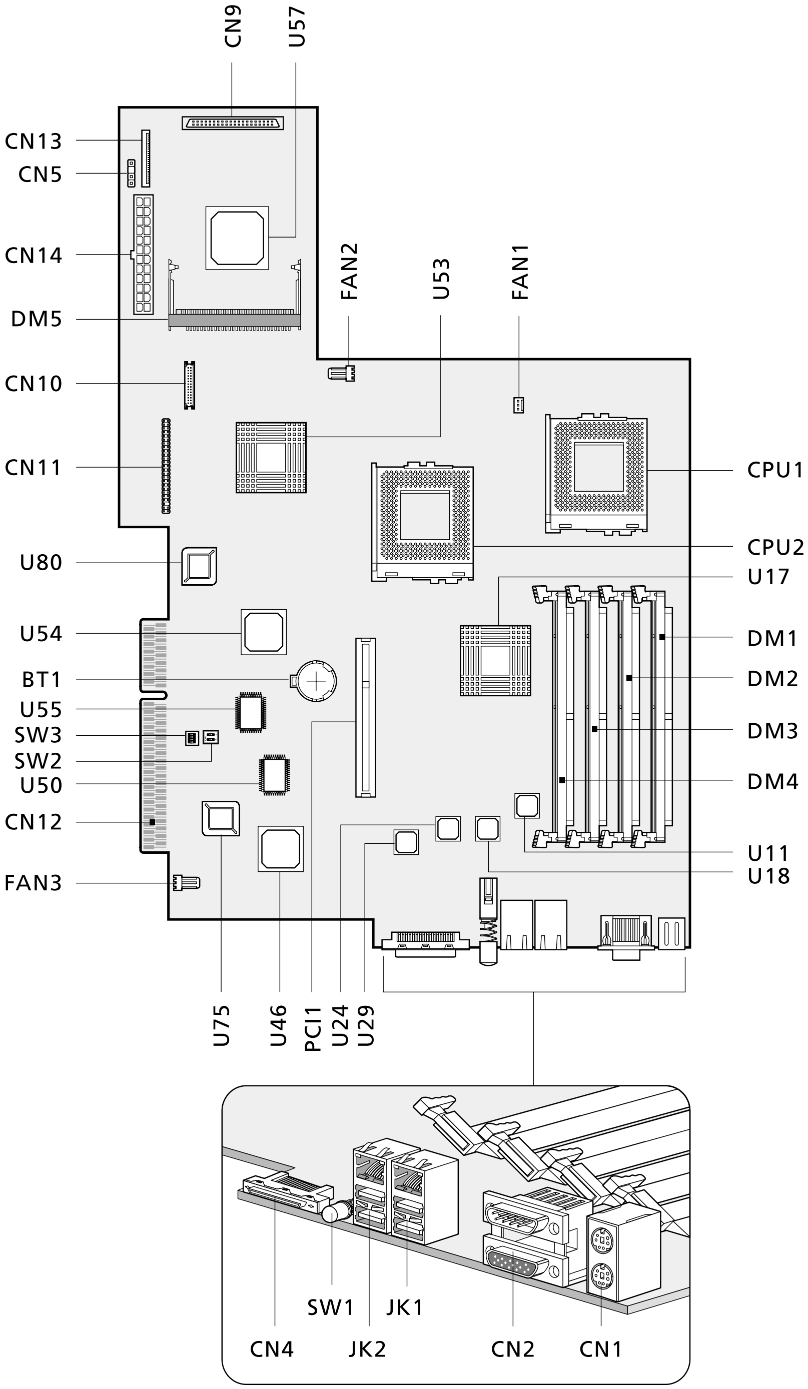
2 Turn the thumbscrew clockwise to secure the cover.



System boards

Mainboard layout

The mainboard becomes accessible once you open the system. It should look like the figure shown below.

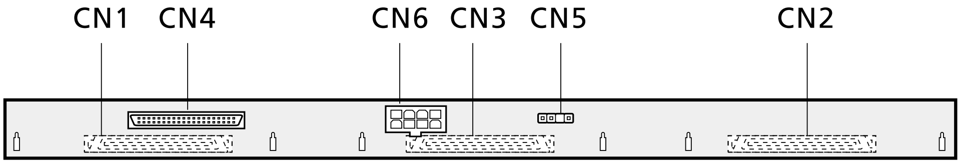

CN9
U57
CN13
CN5
CN14
DM5
CN10
CN11
U80
U54
BT1
U55
SW3
SW2
U50
CN12
FAN3
FAN2
U53
FAN1
CPU1
CPU2
U17
DM1
DM2
DM3
DM4
U11
U18
U75
U46
PCI1
U24
U29
SW1
JK1
CN4
JK2
CN2
CN1

Item	Description
BT1	Battery
CN1	Upper: PS/2 mouse connector Lower: PS/2 keyboard connector
CN2	Upper: Serial port connector Lower: VGA port connector
CN4	External high-density 68-pin SCSI connector
CN5	SCSI HDD LED connector (connects to the SCSI backplane board)
CN9	SCSI board connector (connects to the SCSI backplane board)
CN10	CPU 1 fan connector
CN10	LED board connector (connects to the LED board)
CN11	Slim-type CD-ROM drive connector
CN12	Gold finger (connects to the PCI riser card)
CN13	Slim-type floppy drive connector
CN14	24-pin ATX power supply connector
CPU1	CPU 1 socket
CPU2	CPU 2 socket
DM1 to DM4	DIMM slots
DM5	RAID card connector (connects to the Adaptec daughter card)
FAN1	CPU 1 fan blower connector
FAN2	CPU 2 fan blower connector

Item	Description
FAN3	Rear system fan connector
JK1	LAN jack (RJ-45) Upper: LAN1 Lower: LAN2
JK2	LAN jack (RJ-45) Upper: LAN3 Lower: LAN4
PCI1	64-bit/66 MHz PCI slot (debug only, optional)
SW1	Service LED switch
SW2	Password switch (optional)
SW3	CPU frequency switch (optional)
U11/U18/ U24/U29	Intel 82550 LAN chipsets
U17	Server Works HE-SL chipset (north bridge)
U46	ATI RageXL VGA chipset
U50	Winbond IPMI chipset (W83910F)
U53	Server Works CIOB2 chipset (I/O bridge)
U54	Server Works CSB5 chipset (south bridge)
U55	NS PC87417 Super I/O chipset
U57	Adaptec AIC-7899 chipset
U75	Winbond firmware socket
U80	System BIOS firmware socket

SCSI card layout

Small Computer System Interface (SCSI)



Item	Description
CN1	HDD connector
CN2	HDD connector
CN3	HDD connector
CN4	SCSI connector (connects the SCSI card to the mainboad)
CN5	HDD indicator connector
CN6	Power connector

Adaptec ZCR daughter card layout

Zero-Channel RAID (ZCR)

The daughter card enables RAID (redundant array of independent disks) through PCI interfacing via a 144-pin SO-DIMM connector.

Warning! The ZCR daughter card is designed for use in a 3.3-volt signaling platform. Do not apply 5-volt signals to any signal pins of the daughter card.

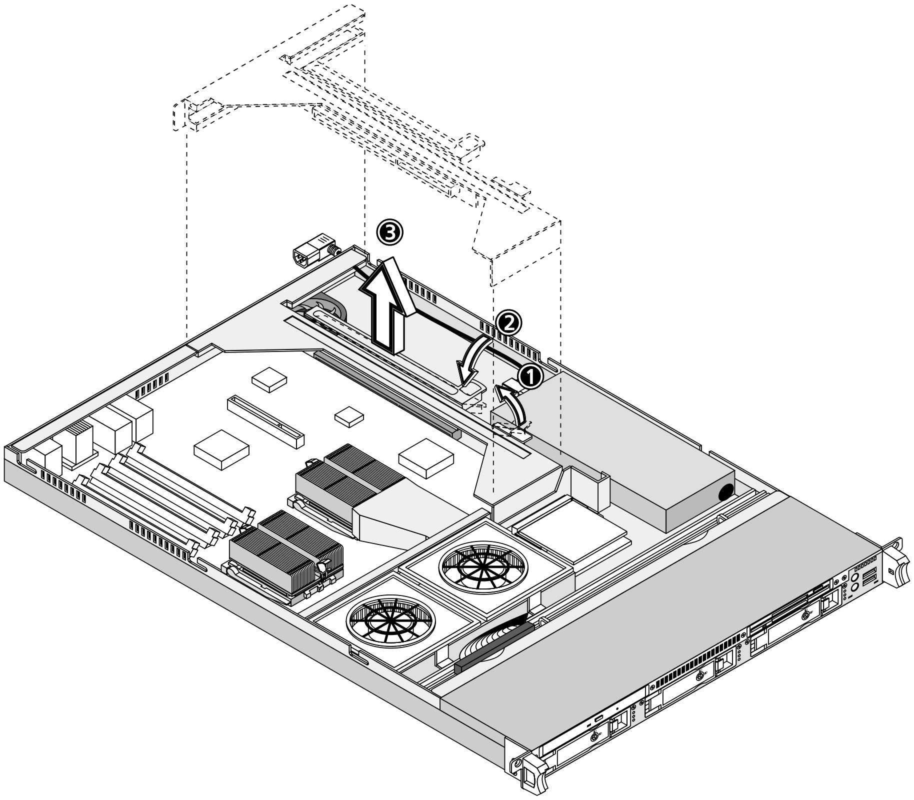
Item	Description

Installing an expansion card

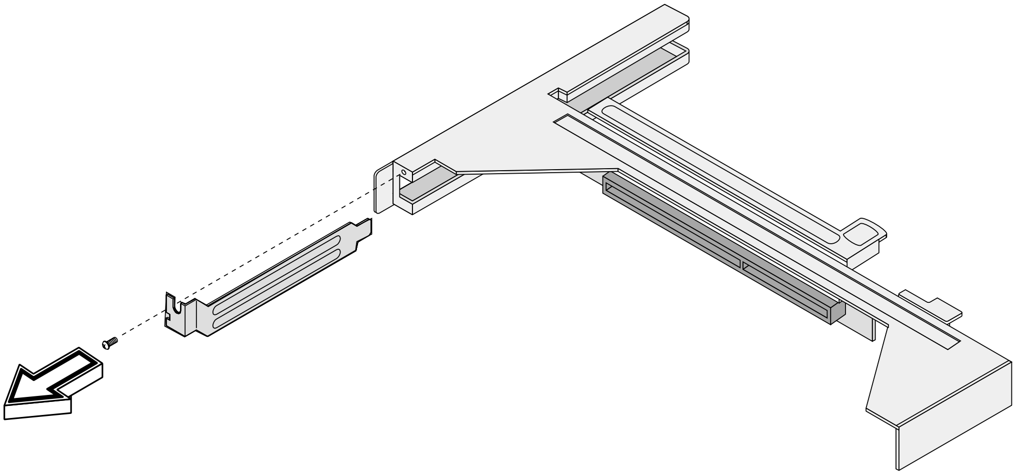
To install an expansion card:

1 Remove the system cover. See “Removing the system cover” on page 37 for more information.

2 Remove the metal bracket from the housing by removing the two screws. Save the screws for later use.



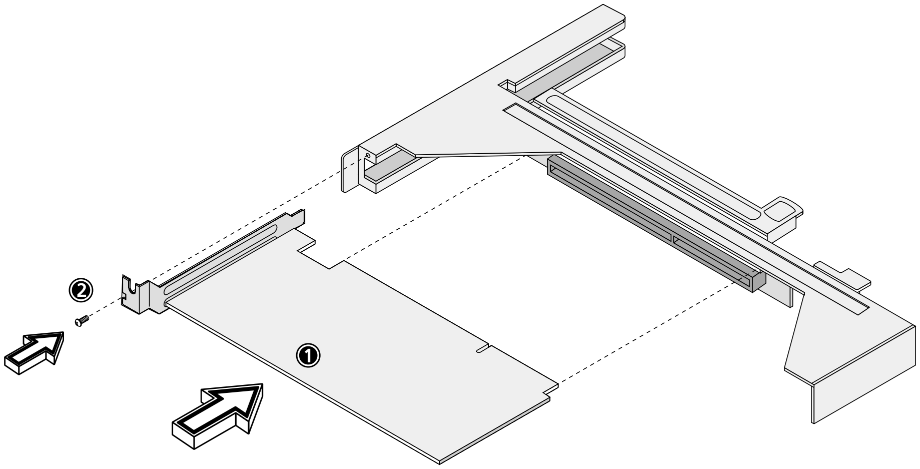
3 Gently pull out the metal bracket with the riser card from the mainboard.



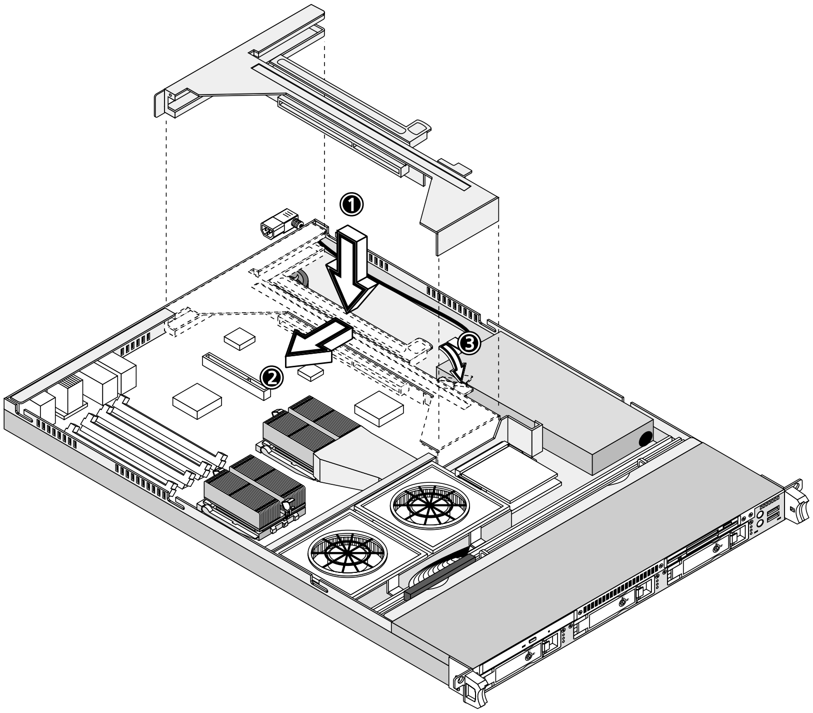
4 Remove the expansion card bracket. Save the screw for later use.

5 Align then insert the expansion card into the riser card.

6 Secure the expansion card to the metal bracket with a screw.



7 Reinstall the metal bracket with the riser card into the mainboard system and secure it with the two screws you have previously removed.



8 Replace the system cover.

Hot-swapping a SCSI SCA hard disk drive

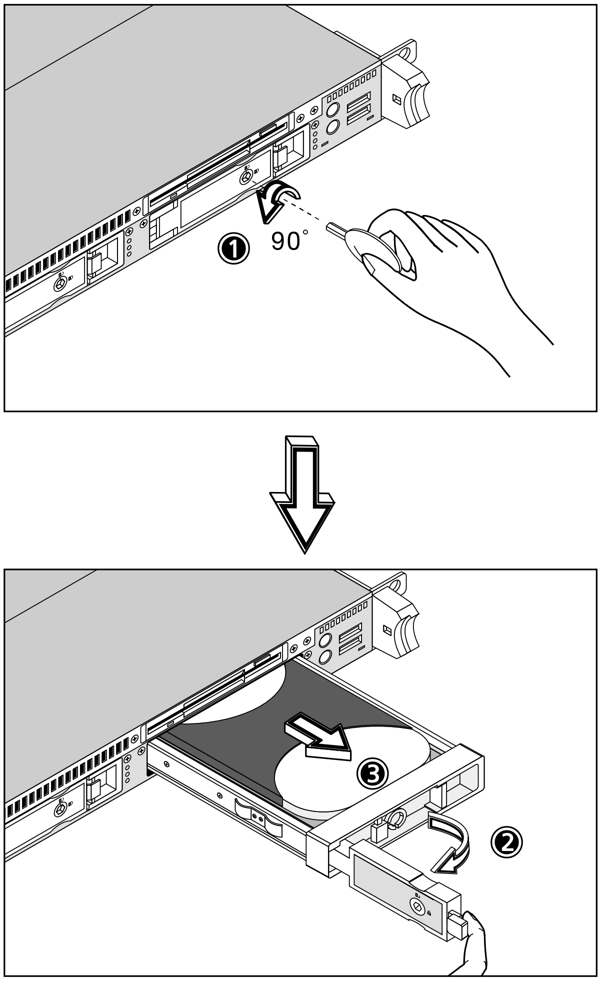
You can hot-swap (remove and replace) a SCSI hard disk drive any time when it fails to operate (indicated by a red LED).

Warning! NEVER attempt to remove a hard disk drive when it is active. Doing so may result to data loss, system crash and damage to both the hard disk drive and to the server system.

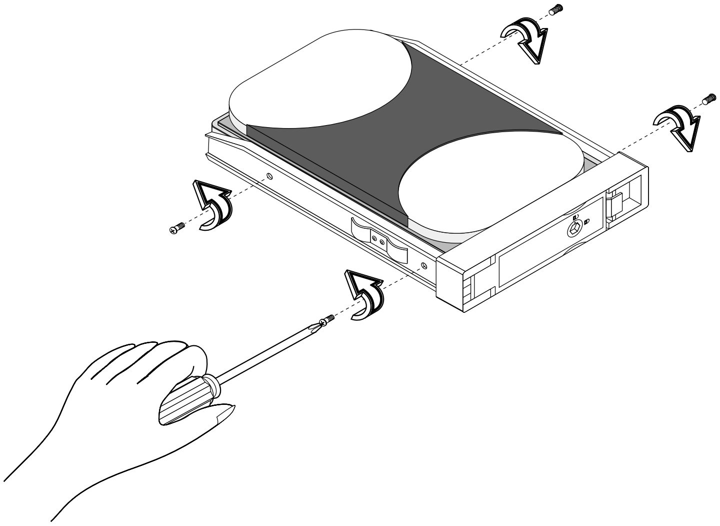
Follow these steps to install a hot-swappable SCSI hard disk:

1 Unlock the drive tray with a hex key.

2 Press your finger to the drive tray to release it. Gently pull it out from the hot-swap cage.



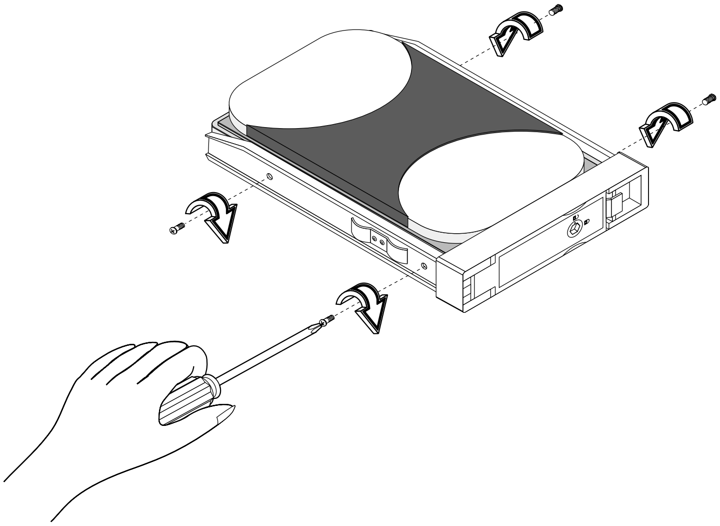
3 Remove the four tray screws to open the drive tray. Keep the screws for later use.



4 When applicable, pull out any previously installed hard disk.

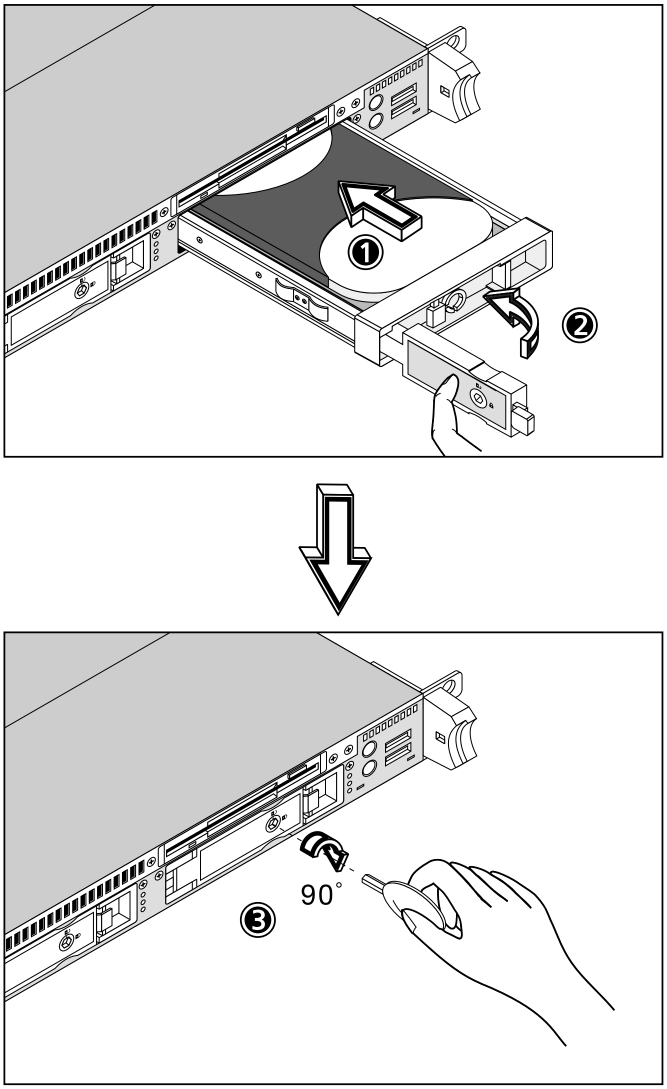
5 Install a hard disk on the drive tray.

6 Secure the hard disk to the drive tray with the four tray screws you have removed earlier.



7 Insert the tray into the hot-swap cage with the lever still extended. Make sure that the drive is properly inserted before closing the lever.

8 Push the lever back until it clicks into place and then lock the drive tray using the hex key.



Removing and installing the CPU

The Intel Tualatin processor comes in a FC-PGA (Flip-Chip Pin Grid Array) 370-pin package. The FC-PGA package is designed for the new breed of sleek, high performance, small form factor PCs.

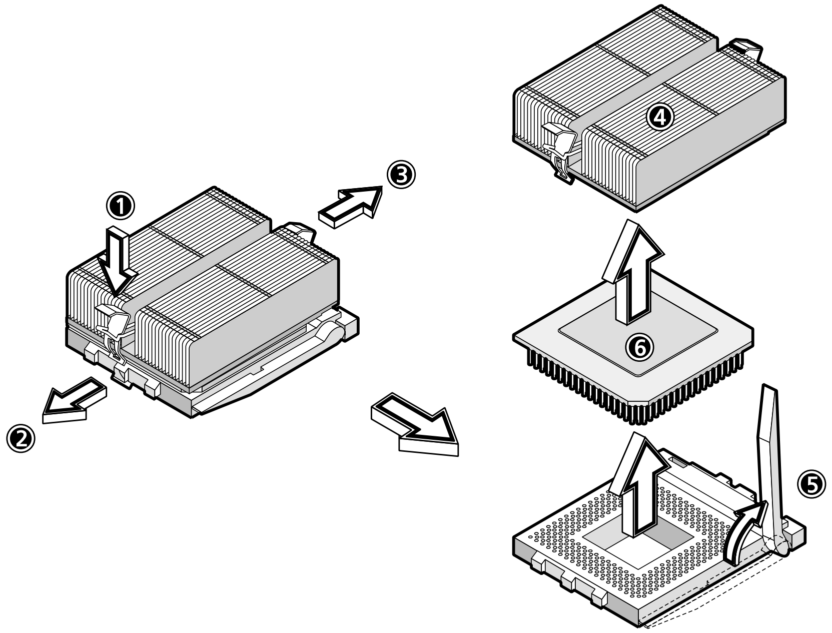
The mainboard supports an Intel Tualatin processor running at 1/133 to 1.26/133 MHz, and future generations of Pentium CPUs.

Caution: Always observe the ESD precautions when installing or removing a system component. Refer to the "Installation precautions" on page 35.

Removing the CPU

Follow these steps to remove a CPU:

1. Remove the system cover. See page 37 for more detailed instructions.
2. Locate the CPU socket on your mainboard.
3. Disconnect the 3-pin and 2-pin heatsink cables from the mainboard.
4. Release the heatsink metal bracket by pressing the hook (**1**). Unhook one side of the heatsink metal bracket (**2**) and gently lift it before removing the other side (**3**).
5. Gently press the socket lever down to release the lever and then pull it up to a 90° angle (**5**). Carefully remove the CPU (**6**).



Installing the CPU

Before you proceed make sure that there is no CPU installed in the CPU socket. Follow the steps below to install a CPU:

1 Locate the CPU socket on your mainboard.

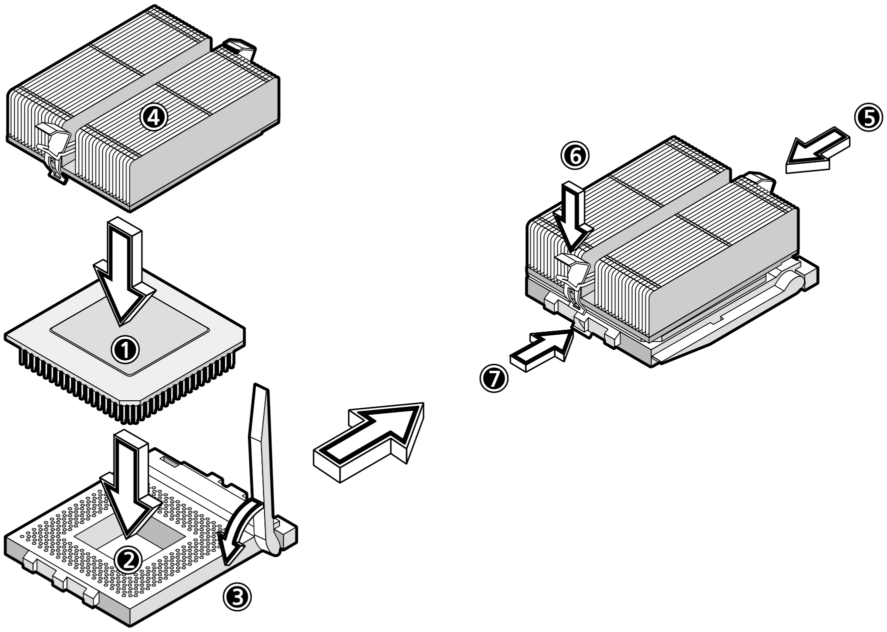
2 Raise the socket lever up to a 90° angle.

3 Remove the processor from its protective packaging.

4 Insert the new CPU into the CPU socket (**1** and **2**). Make sure that pin 1 (indicated by a notched corner) of the CPU connects to hole 1 of the socket.

Press down the socket lever to lock the new CPU into the socket (**3**).

5 Attach one side of the heatsink metal bracket to the CPU socket (**5**) and then gently press down the other side of the metal bracket (**6**) until it locks into place (**7**).



Note: You need to install a terminator board into the CPU 2 socket if you only install one CPU (must be installed in the CPU 1 socket).

6 Connect the 3-pin and 2-pin heatsink cables to the mainboard.

Caution: The heatsink becomes very hot when the system is on. NEVER touch the heatsink with any metal or with your hands.

Removing and installing memory modules

The four DIMM sockets on board accept 64-, 72-, 128-, 144-, 256-, and 512-MB SDRAM (synchronous DRAM) DIMMs for a maximum memory upgrade capacity of up to 4 GB.

For the system to function properly, you have to install at least two DIMMs of 1.3 or 2.4 ___. Install it in either DIMM slot ____ or _______.

The SDRAM DIMMs should work under 3.3 volts only; 5-volt memory devices are not supported. The mainboard supports both 200 and 266 MHz SDRAM DIMMs (PC-1600 and PC-1200). Contact your dealer for qualified DIMM vendors.

This mainboard supports 100 and 133 MHz SDRAM. However, they cannot be used at the same time in the system.

Warning! Do not use both 100 MHz and 133 MHz SDRAM together. This might cause your system to malfunction.

Each of the DIMM sockets is independent from the others. This independence allows you to install DIMMs with different capacities to form different configurations.

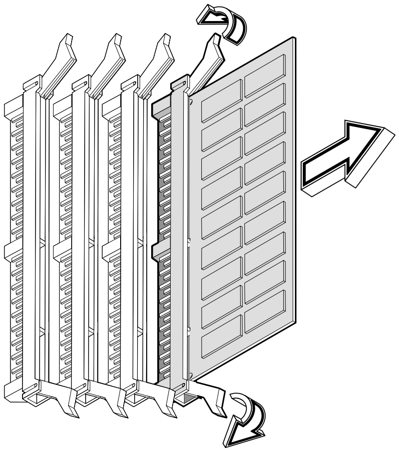
Removing a DIMM

Before you can install a new DIMM in a socket, remove first any previously installed DIMM from that socket.

1 Remove the system cover. See page 37 for more detailed instructions.

2 Locate the DIMM socket on the mainboard.

3 Press the holding clips on both sides of the socket outward to release the DIMM.



Note: Place your forefingers on the top of the DIMM before pressing the holding clips to gently disengage the DIMM from the socket.

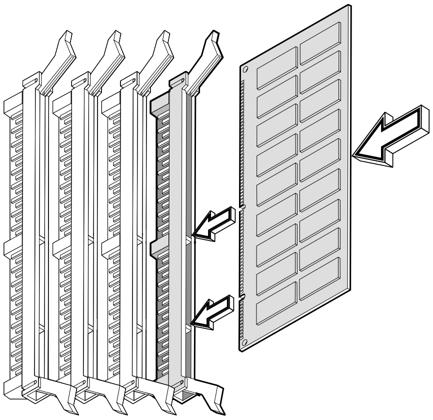
Installing a DIMM

Before you can install a new DIMM in a socket, remove first any previously installed DIMM from that socket.

1 Locate the DIMM socket on the mainboard.

2 Align then insert the DIMM into the socket.

3 Press the holding clips inward to lock the DIMM in place.



Note: The DIMM socket is slotted to ensure proper installation. If you slip in a DIMM but it does not completely fit, you may have inserted it the wrong way. Reverse the orientation of the DIMM.

Reconfiguring the system memory

The system automatically detects the amount of memory installed. Run Setup to view the new value for total system memory and make a note of it.

5 Setup utility

This chapter gives information about the system BIOS and discusses how to configure the system by changing the settings of the BIOS parameters.

BIOS Setup utility

The BIOS Setup utility is a hardware configuration program built into your computer's Basic Input/Output System (BIOS). Since most computers are already properly configured and optimized, there is no need to run this utility. However, if you encounter configuration problems and get the "Run Setup" message, you will need to run this utility.

The Setup program loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM which allows configuration data to be retained when power is turned off.

Note: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

Entering Setup

Power on the computer to start the system POST (Power On Self Test) process. While booting, press the key combination **Ctrl+Alt+Esc** simultaneously.

The Basic Setup Utility main menu will appear.

Note: You must press **Ctrl+Alt+Esc** while the system is booting. This key combination does not work during any other time.

The system supports two Setup Utility levels: Basic and Advanced.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press **F8** while viewing the Basic Setup main menu.

The Key Help Guide (press <Alt+H> to activate) shows you how to move around the BIOS setup screen:

- Use the **Up** and **Down** arrow keys to move around the Setup Utility screen.
- Use the **Left** and **Right** arrow keys to move to the next page or to return to the previous page if the setup screen has more than one page available.
- Use the **Page Up**, **Page Down**, **+**, or **-** keys to select the options if they are available.
- Press **Esc** to return to the Main menu.

Note: A parameter with an asterisk (*) mark indicates that the parameter appears only when you are in the Advanced Level. Also, grayed items on the screens have fixed settings and are not user-configurable.

Basic Setup Utility main menu

```
                Setup Utility
●    System Information
●    Product Information
●    Disk Drives
●    Onboard Peripherals
●    Power Management
●    Boot Options
●    Date and Time
●    System Security
●    IPMI Configuration
●    RDM Configuration

  Load Default Settings
  Abort Settings Change
```

Advanced Setup Utility main menu

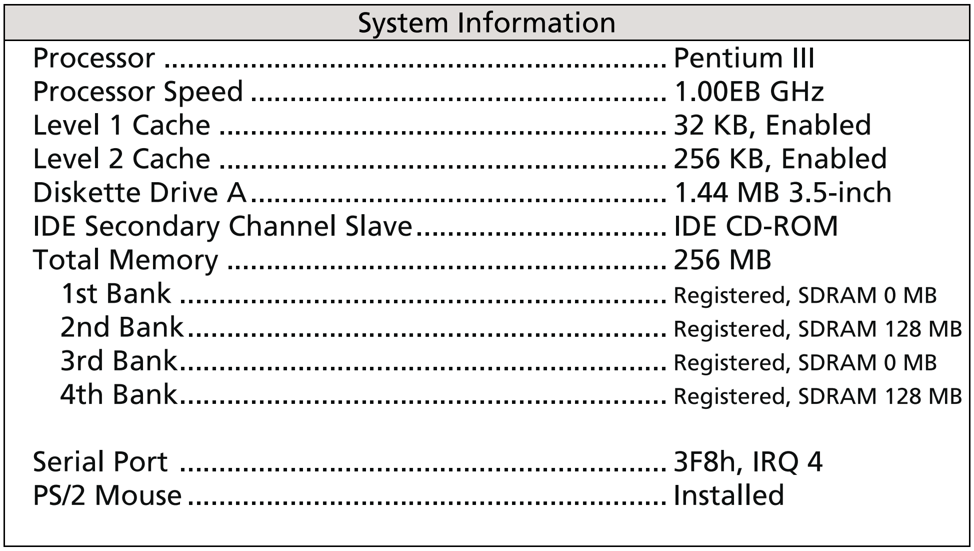
```
                Setup Utility
●    System Information
●    Product Information
●    Disk Drives
●    Onboard Peripherals
●    Power Management
●    Boot Options
●    Date and Time
●    System Security
●    IPMI Configuration
●    Advanced Options

  Load Default Settings
  Abort Settings Change
```

The parameters on the screens shown in this User's guide display default system values. These values may not be the same as those in your computer. The grayed-out items on the screens have fixed settings and are not user-configurable.

In the descriptive table following each of the main menu option screens, the settings in **boldface** are the default and suggested parameter settings.

System Information

The following screen appears if you select **System Information** from the main menu:



```
                         System Information
Processor ............................................ Pentium III
Processor Speed ...................................... 1.00EB GHz
Level 1 Cache ........................................ 32 KB, Enabled
Level 2 Cache ........................................ 256 KB, Enabled
Diskette Drive A ..................................... 1.44 MB 3.5-inch
IDE Secondary Channel Slave .......................... IDE CD-ROM
Total Memory ......................................... 256 MB
  1st Bank ........................................... Registered, SDRAM 0 MB
  2nd Bank ........................................... Registered, SDRAM 128 MB
  3rd Bank ........................................... Registered, SDRAM 0 MB
  4th Bank ........................................... Registered, SDRAM 128 MB

Serial Port .......................................... 3F8h, IRQ 4
PS/2 Mouse ........................................... Installed
```

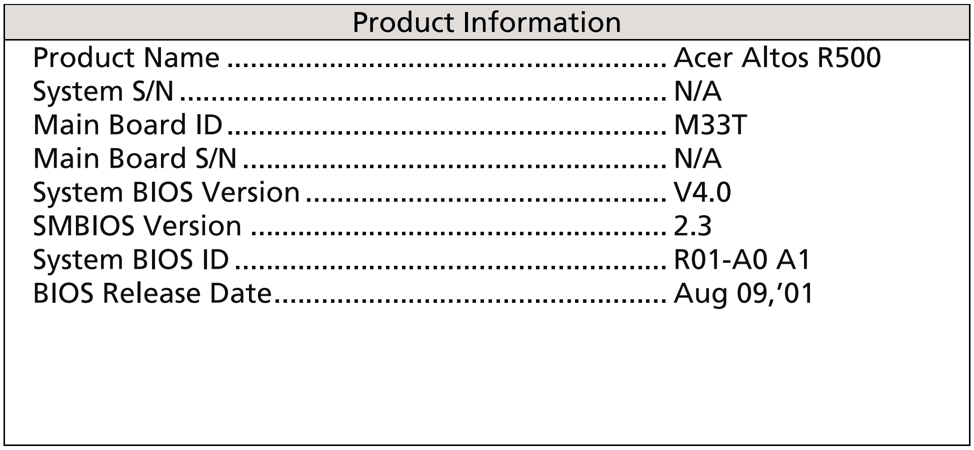
Parameter	Description
Processor	Type of processor currently installed in your system
Processor Speed	Clock speed of the processor currently installed in your system
Level 1 Cache	Total amount of first-level or the internal fast accessed memory size (i.e., the memory integrated into the CPU)
Level 2 Cache	Total amount of second-level cache memory size that comes with the CPU. The available cache sizes are 256 or 512 KB
Diskette Drive A	Current system settings for diskette drive A.
IDE Secondary Channel Slave	Current configuration of the IDE device connected to the slave port of the secondary IDE channel

Parameter	**Description**
Total Memory	Total amount of onboard memory. The memory size is automatically detected by BIOS during the POST. If you install additional memory, the system automatically adjusts this parameter to display the new memory size.
1st Bank 2nd Bank 3rd Bank 4th Bank	Type and size of DIMM installed in DIMM sockets 1, 2, 3 and, 4 respectively. The **None** setting indicates that there is no DIMM installed.
Serial Port	Serial port address and IRQ setting
PS/2 Mouse	Pointing device installation setting. Displays **None** if no pointing device is installed.

Product Information

Product Information displays general data about the system, such as the product name, serial number, BIOS version, etc. These information is necessary for troubleshooting and may be required when asking for technical support. These entries are for your reference only and cannot be changed.

The following shows how the Product Information screen appears:

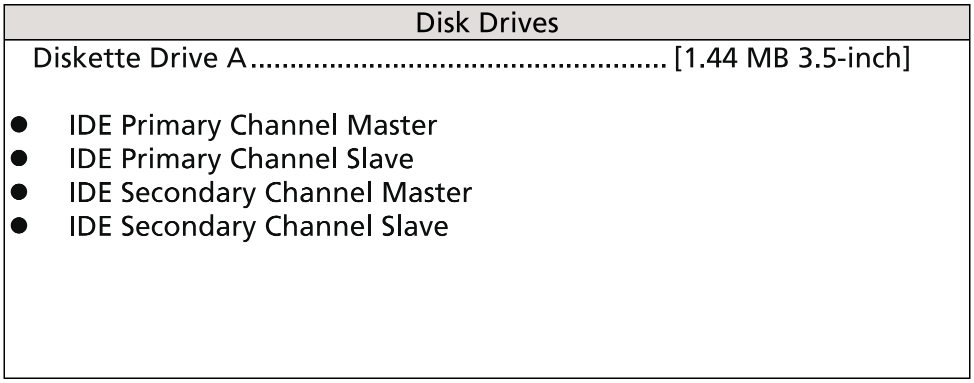


```
                         Product Information
  Product Name ....................................... Acer Altos R500
  System S/N ......................................... N/A
  Main Board ID ...................................... M33T
  Main Board S/N ..................................... N/A
  System BIOS Version ................................ V4.0
  SMBIOS Version ..................................... 2.3
  System BIOS ID ..................................... R01-A0 A1
  BIOS Release Date .................................. Aug 09,'01
```

Parameter	Description
Product Name	Official name of the system
System S/N	System's serial number
Mainboard ID	Mainboard's identification number
Mainboard S/N	Mainboard's serial number
System BIOS Version	Version of the BIOS utility
SMBIOS Version	Version of the SMBIOS
BIOS Release Date	

Disk Drives

Select **Disk Drives** to input configuration values for the system disk drives. The following shows the Disk Drives screen:

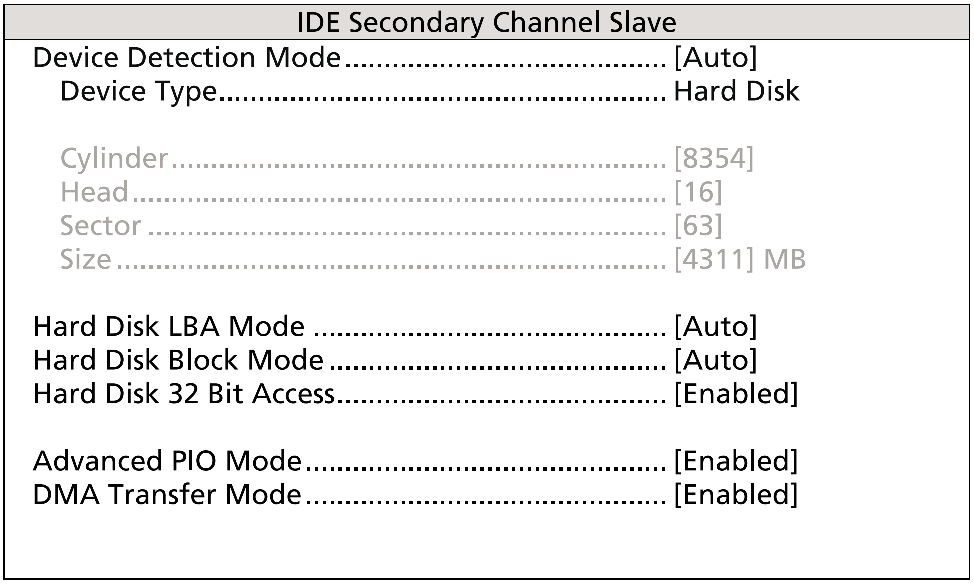


```
                              Disk Drives
  Diskette Drive A.................................................... [1.44 MB 3.5-inch]

●    IDE Primary Channel Master
●    IDE Primary Channel Slave
●    IDE Secondary Channel Master
●    IDE Secondary Channel Slave
```

Parameter	Description	Option
Diskette Drive A	Indicates the floppy disk drive type	**1.44 MB, 3.5-inch** None 360 KB, 5.25-inch 1.2 MB, 5.25-inch 720 KB, 3.5-inch 2.88 MB, 3.5-inch
IDE Primary Channel Master and Slave IDE Secondary Channel Master and Slave	These items let you select the IDE hard disk parameters that your system supports. Auto. Enables BIOS to automatically detect the parameters of installed HDDs during the POST (power-on self-test). User. HDD parameters manually configured. None. No HDD is connected to the system. **Note:** The IDE CD-ROM is always automatically detected.	**Auto** User None

IDE Channel Type

The following screens appear if you select any of the the IDE drive parameters from the Disk Drives screen:



```
                 IDE Secondary Channel Slave
 Device Detection Mode........................ [Auto]
   Device Type................................ Hard Disk

   Cylinder................................... [8354]
   Head....................................... [16]
   Sector .................................... [63]
   Size ...................................... [4311] MB

 Hard Disk LBA Mode .......................... [Auto]
 Hard Disk Block Mode ........................ [Auto]
 Hard Disk 32 Bit Access...................... [Enabled]

 Advanced PIO Mode............................ [Enabled]
 DMA Transfer Mode............................ [Enabled]
```

Parameter	Description	Option
Device Detection Mode	Lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually.	**Auto** User None
Device Type	Indicates a hard disk type device	
Cylinder	Specifies the number of cylinders in your hard disk, and is automatically set depending on your Type parameter setting.	User Input
Head	Specifies the number of heads in your hard disk, and is automatically set depending on your Type parameter setting.	User Input
Sector	Specifies the number of sectors in your hard disk, and is automatically set depending on your Type parameter setting.	User Input

Parameter	Description	Option
Size	Specifies the size of your hard disk, in MB	User Input
Hard Disk LBA Mode	When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows you to use a hard disk with a capacity of more than 528 MB. This is made possible through the Logical Block Address (LBA) mode translation. However, this enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, Windows 98, Windows NT 3.5 and above, and Windows 2000. Other operating systems require this parameter to be set to Disabled.	Auto Disabled
Hard Disk Block Mode	Enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, the BIOS utility automatically detects if the installed hard disk drive suports the Block Mode function. If supported, it allows data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle.	Auto Disabled
Hard Disk 32-bit Access	Improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, Windows 98, Windows NT, Windows 2000, and Novell Netware. If your software or hard disk does not support this function, set this parameter to Disabled.	Enabled Disabled
Advanced PIO Mode	When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results in better hard disk performance. To disregard the feature, change the setting to Disabled.	Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4 Enabled Disabled

Parameter	Description	Option
DMA Transfer Mode	The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded.	**Auto** Multiword Mode 0, 1, 2 Enabled Disabled

Onboard Peripherals

Onboard Peripherals allows you to configure the onboard communication ports and the onboard devices. Selecting this option displays the following screen:

```
                    Onboard Peripherals
Serial Port ........................................... [Enabled]
   Base Address ....................................... [3F8h]
   IRQ ................................................ [4]


Floppy Disk Controller ................................ [Enabled]
PS/2 Mouse Controller ................................. [Enabled]
USB Host Controller ................................... [Enabled]
   USB Legacy Mode .................................... [Disabled]
Onboard SCSI .......................................... [Enabled]
Onboard Ethernet Chip 1 ............................... [Enabled]
Onboard Ethernet Chip 2 ............................... [Enabled]
Onboard Ethernet Chip 3 ............................... [Enabled]
Onboard Ethernet Chip 4 ............................... [Enabled]
```

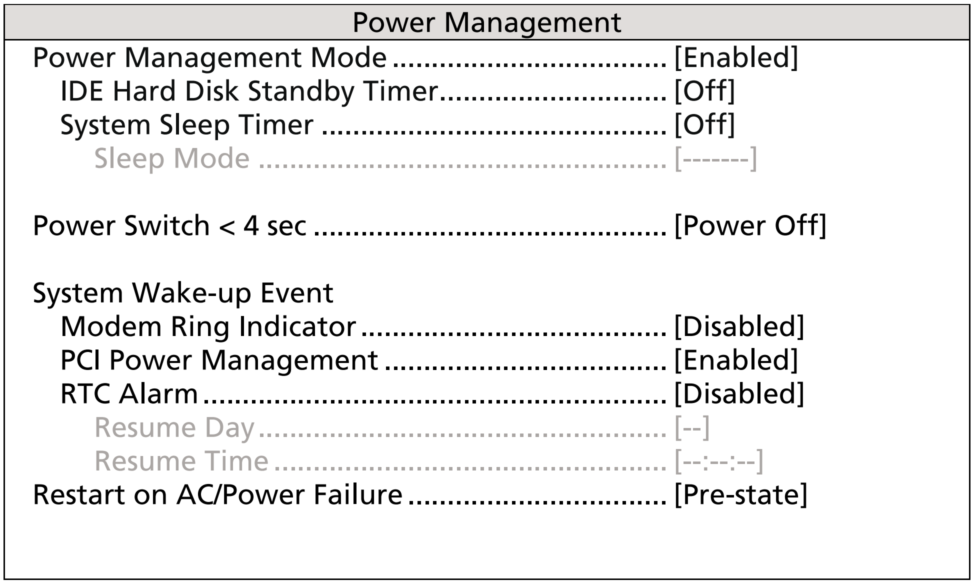
Parameter	Description	Option
Serial Port	Enables or disables the serial port	Enabled Disabled
Base Address	Sets the I/O base address of the serial port	3F8h 2F8h 3E8h 2E8h
IRQ	Sets the IRQ (interrupt request) channel of the serial port	4 11
Floppy Disk Controller	Enables or disables the onboard floppy disk controller	Enabled Disabled
PS/2 Mouse Controller	Enables or disables the onboard PS/2 mouse controller	**Enabled** Disabled
USB Host Controller	Enables or disables the onboard USB host controller	**Enabled** Disabled

Parameter	Description	Option
USB Legacy Mode	Activates or deactivates the USB keyboard connected to your system. When activated, the USB keyboard functions in a DOS environment.	**Disabled** Enabled
Onboard SCSI	Enables or disables the onboard SCSI controller	**Enabled** Disabled
Onboard Ethernet Chip 1	Enables or disables the first onboard network feature	**Enabled** Disabled
Onboard Ethernet Chip 2	Enables or disables the second onboard network feature	**Enabled** Disabled
Onboard Ethernet Chip 3	Enables or disables the first third network feature	**Enabled** Disabled
Onboard Ethernet Chip 4	Enables or disables the fourth onboard network feature	**Enabled** Disabled

Power Management

The **Power Management** menu allows you to configure the system's power management feature.

The following screen shows the parameters on the Power Management screen:



```
                    Power Management
 Power Management Mode .................................. [Enabled]
   IDE Hard Disk Standby Timer........................... [Off]
   System Sleep Timer ................................... [Off]
      Sleep Mode ........................................ [-------]

 Power Switch < 4 sec ................................... [Power Off]

 System Wake-up Event
   Modem Ring Indicator ................................. [Disabled]
   PCI Power Management ................................. [Enabled]
   RTC Alarm ............................................ [Disabled]
      Resume Day ........................................ [--]
      Resume Time ....................................... [--:--:--]
 Restart on AC/Power Failure ............................ [Pre-state]
```

Parameter	Description	Option
Power Management Mode	Allows you to reduce power consumption. When this parameter is set to Enabled, you can configure the IDE hard disk and system timers. Setting it to Disabled deactivates the power-management feature and its timers.	**Enabled** Disabled
IDE Hard Disk Standby Timer	Allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to normal speed. Set this parameter to Off if your hard disk does not support this function.	**Off** 1 minute 15 minutes

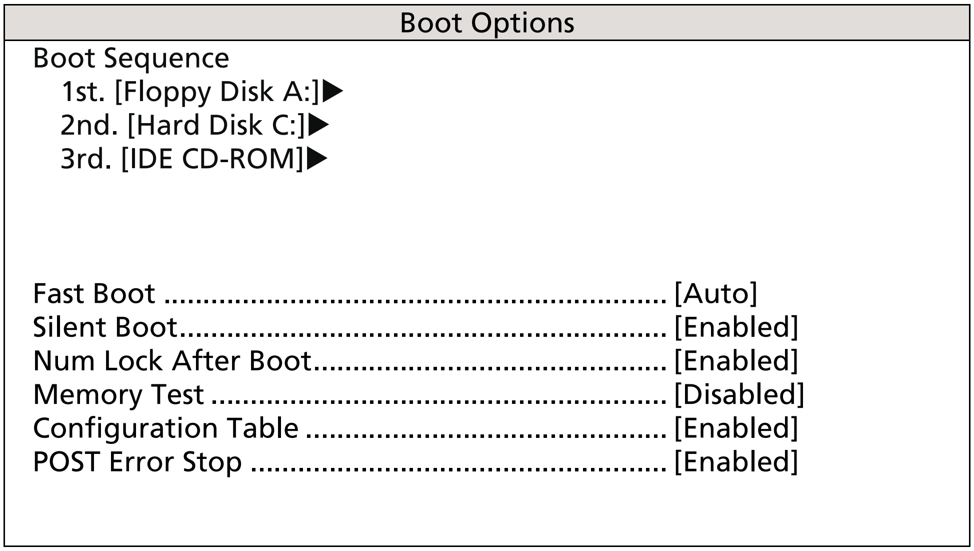
Parameter	Description	Option
System Sleep Timer	This parameter sets the system to the lowest power-saving mode after a specified period of inactivity. Any keyboard or mouse action or any activity detected from the IRQ channels resumes system operation.	**Off** On
Sleep Mode	Lets you specify the power-saving mode that the system will enter after a specified period of inactivity. This parameter becomes configurable only if the System Sleep Timer is on. Any keyboard or mouse action, or any enabled monitored activities occurring through the IRQ channels resume system operation.	**Standby** Suspend
Power Switch < 4 sec.	When set to Power off, the system automatically turns off when the power switch is pressed for less than 4 seconds. When set to Suspend, the system enters the suspend mode when the power switch is pressed for less than 4 seconds.	**Power off** Suspend
System Wake-up Event	The system wake-up event allows the system to resume operation when the modem ring indicator is enabled.	
Modem Ring Indicator	When Enabled, any fax/modem activity wakes up the system from suspend mode.	**Enabled** Disabled
PCI Power Management	Enables or disabled the PCI power managment function	**Enabled** Disabled
RTC Alarm	Allows you to set a certain time on a certain day to wake-up your system from suspend mode.	**Disabled** Enabled
Resume Day	If RTC alarm is enabled, the system will resume operation on the day indicated here.	User input
Resume Time	If RTC alarm is enabled, the system will resume operation at the time indicated here.	User input

Parameter	**Description**	**Option**
Restart on AC Power Failure	When power failure occurs and this setting is enabled, the system will be turned on, when the power comes back, if the system was on. When power failure occurs and this setting is disabled, the system remains off when the power comes back, even if the system was on before the power failure occurs.	**Enabled** Disabled

Boot Options

This option allows you to specify your preferred settings for boot up.

The following screen appears if you select **Boot Options** from the main menu:



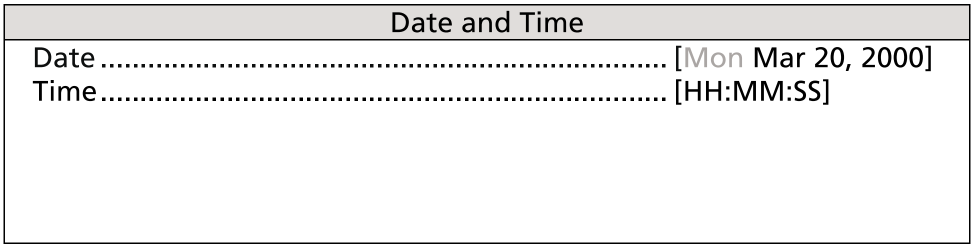
```
                          Boot Options
 Boot Sequence
   1st. [Floppy Disk A:]▶
   2nd. [Hard Disk C:]▶
   3rd. [IDE CD-ROM]▶



 Fast Boot ................................................ [Auto]
 Silent Boot............................................... [Enabled]
 Num Lock After Boot....................................... [Enabled]
 Memory Test .............................................. [Disabled]
 Configuration Table ...................................... [Enabled]
 POST Error Stop .......................................... [Enabled]
```

Parameter	Description	Option
Boot Sequence	This parameter allows you to specify the boot search sequence during POST. 1st. The system checks this drive first. 2nd. The system then checks this drive if it can not boot from the 1st specified drive. 3rd. If the 1st and 2nd searches fail then it boots from this drive. BIOS will display an error message if the drive(s) specified is not bootable.	
Fast Boot	Allows the system to boot faster by skipping some POST routines	Disabled **Auto**

Parameter	**Description**	**Option**
Silent Boot	Enables or disables the Silent Boot function. When set to Enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After booting the screen displays the operating system prompt (such as DOS) or logo (such as Windows 95). If any error occurs while booting, the system automatically switches to text mode. Even if your setting is Enabled, you may also switch to text mode while booting by pressing the **Delete** key when you see the "Press DELETE key to enter setup" message on the screen. When set to Disabled, BIOS is in the conventional text mode where you see the system initialization details on the screen	Enabled **Disabled**
Num Lock After Boot	Allows you to activate the Num Lock function upon booting	Enabled **Disabled**
Memory Test	When set to Enabled, this parameter allows the system to perform a RAM test during the POST routine. When set to Disabled, the system detects only the memory size and bypasses the test routine.	Enabled **Disabled**
Release All Blocked Memory	When set to Enabled, this parameter allows the system to bypass testing the defective memory banks detected earlier	**Disabled** Enabled
Configuration Table	Displays preboot system configuration table when enabled	**Enabled** Disabled
POST Error Stop	When enabled, if the POST finds an error, it will stop and the user has to press **F1** to continue. If disabled, even when the POST finds an error, it will not stop	**Enabled** Disabled

Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the power is off.



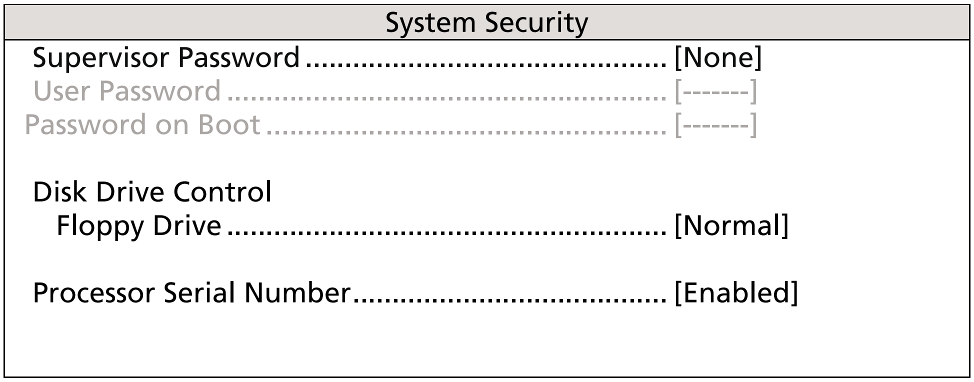
```
                        Date and Time
Date ........................................ [Mon Mar 20, 2000]
Time ........................................ [HH:MM:SS]
```

Parameter	Description
Date	Set the date following the weekday-month-day-year format. Valid values for weekday, month, day, and year are: Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec Day: 1 to 31 Year: 1980 to 2079
Time	Set the time following the hour-minute-second format. Valid values for hour, minute, and second are: Hour: 00 to 23 Minute: 00 to 59 Second: 00 to 59

System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

The following screen appears if you select **System Security** from the main menu:



```
                       System Security
 Supervisor Password ............................. [None]
 User Password ................................... [-------]
Password on Boot ................................. [-------]

 Disk Drive Control
   Floppy Drive .................................. [Normal]

 Processor Serial Number ......................... [Enabled]
```

Parameter	Description	Option
Supervisor Password	Prevents unauthorized access to the BIOS Setup utility. The Present setting allows you to set a Supervisor password.	**None** Present
User Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. User password is available only when a Supervisor password is set. The Present settings allows you to set a User password.	**None** Present
Disk Drive Control	The disk drive control features enable or disable the read/write functions of disk drives. These parameter can also control the diskette drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives remain operational.	

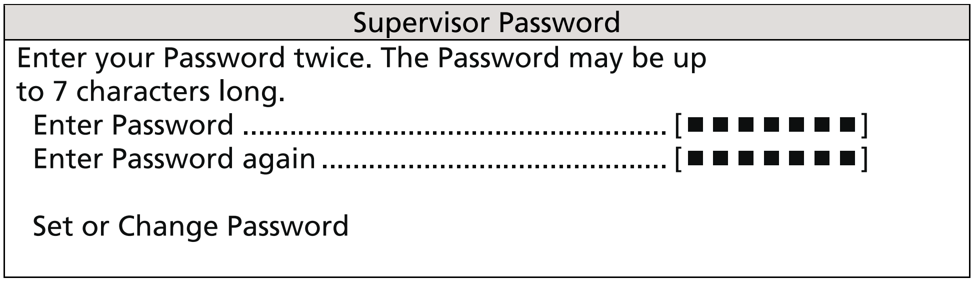
Parameter	Description	Option
Floppy Drive	Sets the control level of the floppy drive	Normal Write Protect All Sectors Write Protect Boot Sectors Disabled
Processor Serial Number	The Pentium III processor incorporates an individual serial number in each chip that can identify individual CPUs. When enabled, CPUs can be identified by processor serial number. Disable this parameter to deactivate this feature.	**Disabled** Enabled

Setting and changing the password

To set or change a Supervisor/User password:

1. Enable the Supervisor Password or User Password parameter in the System Security menu by pressing the **Up** or **Down** arrow key to select **Present**. The corresponding password window appears:

   Supervisor Password window



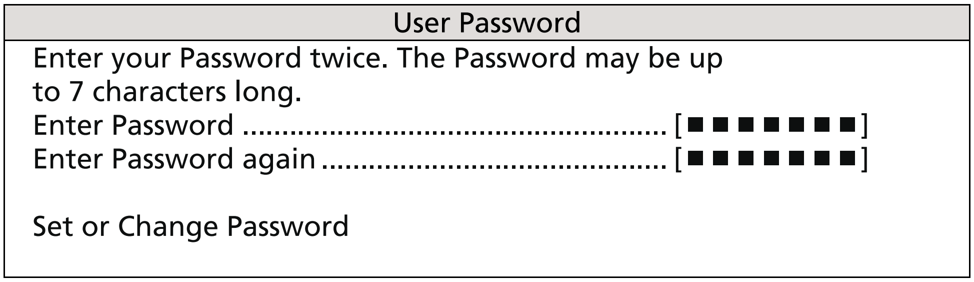
Supervisor Password

Enter your Password twice. The Password may be up to 7 characters long.

Enter Password .... [■■■■■■■]
Enter Password again .... [■■■■■■■]

Set or Change Password

User Password window



User Password

Enter your Password twice. The Password may be up to 7 characters long.

Enter Password .... [■■■■■■■]
Enter Password again .... [■■■■■■■]

Set or Change Password

2. Type a password then press **Enter**. The password may consist of up to seven alphanumeric characters.

   Note: Be careful when typing your password because the actual characters do not appear on the screen; password characters appear as asterisks (*).

3. Retype the password to verify your first entry then press **Enter**.
4. Highlight the "**Set or Change Password**" option then press **Enter**.
5. Press **Esc** to return to the System Security screen.
6. Press **Esc** to exit Setup. The Exit Setup screen appears.
7. Choose "**Yes**" to save your settings and exit Setup. Your password will be saved to CMOS.

Removing a password

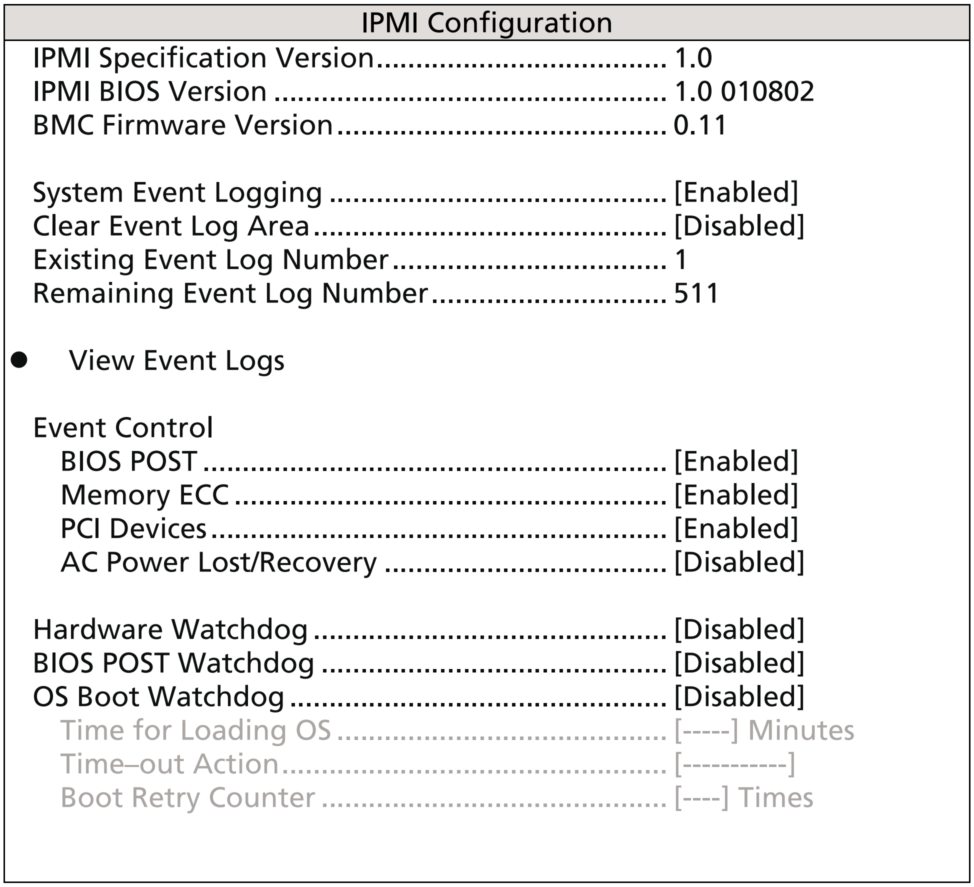
To remove your Supervisor/User password:

1. Disable the Supervisor Password or User Password parameter in the System Security menu by pressing the up or down arrow key to select **None**.
2. Press **Esc** to return to the System Security menu.
3. Press **Esc** to exit Setup. The Exit Setup screen appears:
4. Choose **Yes** to save your settings and exit Setup. Your previous password will be removed from CMOS.

IPMI Configuration

Intelligent Platform Management Interface

The system event log enables you to record and monitor events that occur in your system like system temperature changes, fan stops, and others. This feature also allows you to specify the appropriate settings for your system's event handling.



```
                         IPMI Configuration
 IPMI Specification Version.................................... 1.0
 IPMI BIOS Version ................................................. 1.0 010802
 BMC Firmware Version......................................... 0.11

 System Event Logging .......................................... [Enabled]
 Clear Event Log Area........................................... [Disabled]
 Existing Event Log Number.................................. 1
 Remaining Event Log Number............................. 511

●    View Event Logs

 Event Control
    BIOS POST ......................................................... [Enabled]
    Memory ECC ...................................................... [Enabled]
    PCI Devices........................................................ [Enabled]
    AC Power Lost/Recovery .................................. [Disabled]

 Hardware Watchdog ............................................ [Disabled]
 BIOS POST Watchdog ........................................... [Disabled]
 OS Boot Watchdog ............................................... [Disabled]
    Time for Loading OS ......................................... [-----] Minutes
    Time–out Action................................................ [-----------]
    Boot Retry Counter ............................................ [----] Times
```

The following table describes the parameters in the IPMI configuration screen. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Option
IPMI Specification Version	Specifies the version of Intelligent Platform Management Interface (IPMI)	

Parameter	Description	Option
IPMI BIOS Version	Shows the version of IPMI BIOS	
BMC Firmware Version	Specifies the version of BaseBoard Management Controller (BMC) Firmware	
System Event Logging	Enables or disables the event logging function of your system	**Enabled** Disabled
Clear Event Log Area	Clears the event log whenever the event log area is full	**Disabled** Enabled
Existing Event Log Number	Number of events currently located in the event log area	
Remaining Event Log Number	Number of spaces that are still available for logging system events	
View Event Logs	Opens the system event log file for viewing	
Event Control		
BIOS POST	BIOS checks the bad processors and memory modules during POST. When this parameter is enabled, BIOS will stop POST operation whenever it finds a bad processor or memory. Otherwise, if disabled the system will continue running.	**Enabled** Disabled
Memory ECC	ECC (error correcting code) tests the accuracy of data as it passes in and out of memory. This parameter enables or disables the monitoring of this function.	**Enabled** Disabled
PCI Devices	PCI (Peripheral Component Interconnect) is a 32-bit bus that supports a 64-bit extension for new processors, such as Pentium processors. It can run at clock speeds of 33 or 66 MHz. This parameter monitors the activity of this bus when set to Enabled.	**Enabled** Disabled

Parameter	Description	Option
AC Power Lost/Recovery	BMC will log AC power lost and recovery event.	Enabled **Disabled**
Hardware Watchdog	If system hardware reset fails, BMC will power off system for 10 seconds, then power on again. It will try twice. If system still fails to power on, BMC will perform CPU reduction or power off the system.	Enabled **Disabled**
BIOS POST Watchdog	BIOS will have a watchdog for POST. If POST hangs up, BMC will reset the system. It will try twice. If POST still hangs up, BMC will power off the system.	Enabled **Disabled**
OS Boot Watchdog		
Time for Loading OS		
Time-out Action		
Boot Retry Counter		

RDM Configuration

```
                          RDM Configuration
RDM 4.3 BIOS Version ........................................ 001005
Console Redirection.......................................... [Disabled]

Hidden Partition ............................................ [Disabled]

   Communication Protocol ................................... [N, 8, 1]
   COM Port Baud Rate ....................................... [57600]
       Detect Tone .......................................... [Enabled]
   Remote Console Phone No. ................................. [          ]
   Dial Out Retry Times ..................................... [   2  ]

Modem Initial Command ....................................... [            ]

Emergency Management
RDM Work Mode ............................................... [Disabled]
Connect-in Password ......................................... [      ]
Paging Times ................................................ [1]
Paging No :
   1. ................ [                              ]
   2. ................ [                              ]
```

Parameter	Description	Option
RDM 4.3 BIOS Version	Shows the version number of the RDM BIOS	
Console Redirection	This parameter lets you enable or disable the connection to the RDM manager station. If enabled and conditions are met, the RDM-enabled server automatically dials the RDM manager station using the phone number specified in the Remote Console Phone No. parameter when the server reboots. Once the connection is established, both the RDM server and the RDM manager station display the same screen which enables the RDM manager station to function the same as the server console. Setting this to Disabled deactivates the RDM manager station.	Disabled Enabled

Parameter	Description	Option
Hidden Partition	If you want the hidden partition to become accessible, set this parameter to Enabled. When enabled, the server boots to the hidden partition.	Disabled Enabled
Communication Protocol	This parameter specifies the parity, stop bits, and data length for the COM port to use for RDM connection. This is fixed at N (none), 8, 1 setting and is non-configurable.	**N** 8 1
COM Port Baud Rate	This parameter lets you set the transfer rate of the COM port for RDM connection. The parameter setting depends on your modem specification; therefore, before you change the setting of this parameter, check the documentation that came with your modem.	9600 57600
Detect Tone	When enabled, RDM first checks for the existence of a telephone tone before it dials out. When disabled, RDM proceeds with the dialing process without checking for a telephone tone.	**Enabled** Disabled
Remote Console Phone No.	This parameter allows you to set the phone number of the RDM manager station that the RDM module must dial once RDM is activated and the Remote Console is enabled. To set, simply highlight the parameter and enter the Remote Console phone number. If the remote console phone number is using an (X) line, then you must enter six commas (,) after the phone number and before the extension number, if any. When entering the extension number, we recommend that you insert a comma after each number. The commas specify delay. If this parameter is left blank, the Remote Console calling function is disregarded.	User input

Parameter	Description	Option
Dial Out Retry Times	This parameter lets you specify the maximum number of times the RDM server must retry to connect to the RDM manager station once the server fails and RDM is activated. If the server has completed the specified number of tries and the connection still fails, the server bypasses RDM and goes into normal mode.	2 4 8 Infinite
Modem Initial Command	Some modems require specific commands for initialization. This parameter allows you to specify the required command to enable your system to support special types of modems. If you do not specify any command, BIOS uses the default method to initialize the modem[a].	User input
Emergency Management		
RDM Work Mode	When detecting system failure, the RDM module will take some actions according to the active mode. Waiting: Page and wait for the RDM Station to call in Reboot: Page, then reboot Disabled: No action **Note:** If Waiting is selected, a password consisting of at least three alphanumeric characters must be set.	Disabled Waiting Reboot
Waiting Mode Password	Prevents unauthorized access to the server	User input
Paging Times	Allows you to set the number of times that the RDM module must dial when the server fails or hangs	**1** 2 4 8
Paging No.	Allows you to set the pager number that the RDM module must dial when the server fails or hangs	User input

---

[a] Specify an initialization command only when you receive a Modem Initial Command Fail error message. Otherwise, leave this parameter blank.

Advanced Options

Note: To avoid damaging the system, do not change any settings in the Advanced Options submenu if you are not a qualified technician .

The following screen shows the **Advanced Options** parameters:

Advanced Options
● Memory/Cache Options
● PnP/PCI Options
● CPU Frequency
● Chipset Settings

Memory/Cache Options

Memory/Cache Options allows you to configure the advanced system memory functions.

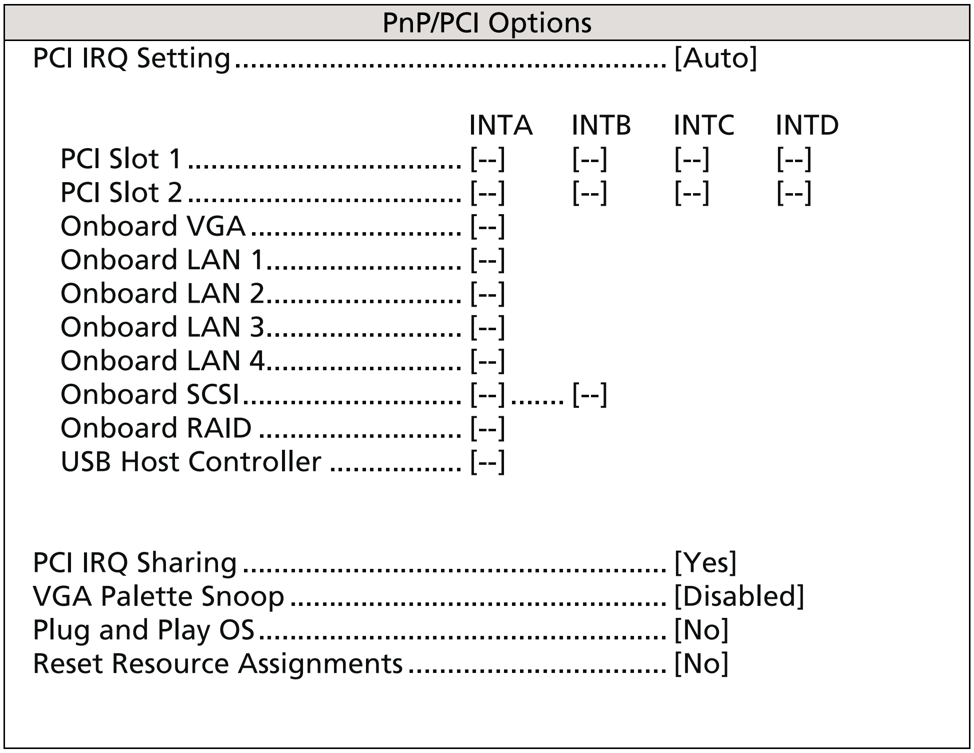
Memory/Cache Options	
Level 1 Cache	[Enabled]
Level 2 Cache	[Enabled]
Memory Remap Function.....................................	[Disabled]

Parameter	Description	Option
Level 1 Cache	Enables or disables the first-level or internal memory, that is, the memory integrated into the CPU.	**Enabled** Disabled

Parameter	Description	Option
Level 2 Cache	Enables or disables the second-level cache memory which is incorporated in the CPU module.	**Enabled** Disabled
Memory Remap Function		

PnP/PCI Options

PnP/PCI Options allows you to specify the settings for your PCI devices. Selecting this option displays the following screen:



```
                          PnP/PCI Options
PCI IRQ Setting.......................................... [Auto]

                                INTA   INTB   INTC   INTD
  PCI Slot 1 ................... [--]   [--]   [--]   [--]
  PCI Slot 2 ................... [--]   [--]   [--]   [--]
  Onboard VGA .................. [--]
  Onboard LAN 1................. [--]
  Onboard LAN 2................. [--]
  Onboard LAN 3................. [--]
  Onboard LAN 4................. [--]
  Onboard SCSI.................. [--]....... [--]
  Onboard RAID ................. [--]
  USB Host Controller .......... [--]


PCI IRQ Sharing ......................................... [Yes]
VGA Palette Snoop ....................................... [Disabled]
Plug and Play OS......................................... [No]
Reset Resource Assignments .............................. [No]
```

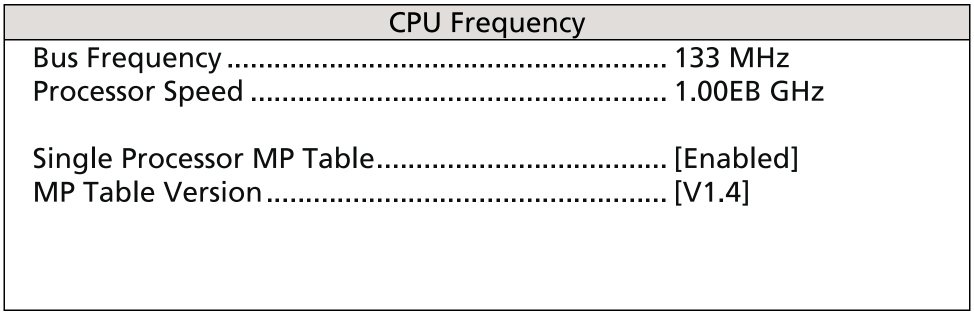
Parameter	Description	Option
PCI IRQ Setting	Select Auto to let BIOS automatically configure the plug-and-play (PnP) devices installed on your system; Otherwise, select Manual. **Note:** Refer to the documentation that came with your PCI card for more technical information.	**Auto** Manual
PCI Slot 1 PCI Slot 2	When you set the PCI IRQ Setting parameter to Auto, these parameters specify the auto-assigned interrupt for each of the PCI devices. When you set the PCI IRQ Setting parameter to Manual, you need to specify the interrupt that you want to assign for each PCI device installed in your system.	User input

Parameter	Description	Option
Onboard LAN 1 Onboard LAN 2 Onboard LAN 3 Onboard LAN 4	When you set the PCI IRQ Setting parameter to Auto, this parameter specifies the auto-assigned interrupt for the onboard LAN controlers installed in your system. When you set the PCI IRQ Setting parameter to Manual, you need to specify the interrupt that you want to assign for the onboard LAN controllers installed in your system.	User input
Onboard SCSI	Allows you to manually assign the interrupt for the onboard SCSI when the PCI IRQ Setting parameter is set to Manual. This parameter is grayed and not user-configurable when the PCI IRQ Setting is set to Auto.	User input
Onboard RAID		User input
USB Host Controller	Allows you to manually assign the interrupt for the USB host controller when the PCI IRQ Setting parameter is set to Manual. This parameter is grayed and not user-configurable when the PCI IRQ Setting is set to Auto.	**Disabled** Enabled
PCI IRQ Sharing	Setting this parameter to Yes allows you to assign the same IRQ to two different devices. To disable the feature, select No. **Note:** If there are no IRQs available to assign for the remaining device function, it is recommended that you enable this parameter.	**Yes** No

Parameter	Description	Option
VGA Palette Snoop	This parameter permits you to use the palette snooping feature if you installed more than one VGA card in the system. The VGA palette snoop function allows the control palette register (CPR) to manage and update the VGA RAMDAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAMDACs. The signal goes through the cards continuously until all RAMDAC data has been updated. This allows the display of multiple images on the screen. **Note:** Some VGA cards require specific settings for this feature. Check your VGA card documentation before setting this parameter.	**Disabled** Enabled
Plug and Play OS	When this parameter is set to Yes, BIOS initializes only PnP boot devices such as SCSI cards. When set to No, BIOS initializes all PnP boot and non-boot devices such as sound cards. **Note:** Set this parameter to Yes only if your operating system is Windows 95/98 or Windows 2000.	**Yes** No
Reset Resource Assignments	Set this parameter to Yes to avoid IRQ conflicts when installing non-PnP or PnP ISA cards. This clears all resource assignments and allows BIOS to reassign resources to all installed PnP devices the next time the system boots. After clearing the resource data, the parameter resets to No.	Yes **No**

CPU Frequency

This parameter displays your CPU’s speed and bus frequency. Selecting this option displays the following screen:



```
                              CPU Frequency
Bus Frequency ........................................................ 133 MHz
Processor Speed ..................................................... 1.00EB GHz

Single Processor MP Table.................................... [Enabled]
MP Table Version .................................................. [V1.4]
```

Parameter	Description	Option
Bus Frequency	The bus frequency refers to the speed by which data is transferred between internal computer components and the CPU or the main memory of the CPU. A fast bus allows data to be transferred faster, which makes applications run faster.	
Processor Speed	The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.	
Single Processor MP Table	Enabling this parameter allows BIOS to create a multiprocessor (MP) table for Windows NT use. In a single-processor system running Windows NT, you may disable this parameter to enhance system performance. If you install another CPU for a dual system, enable this parameter then re-install Windows NT. In cases when this parameter is enabled before installing Windows NT in a single-processor system, you may upgrade to a multiprocessor system without reinstalling Windows NT.	**Enabled** Disabled

Parameter	**Description**	**Option**
MP Table Version	Version number of the MP table	

Chipset Settings

Chipset Settings allows you to .

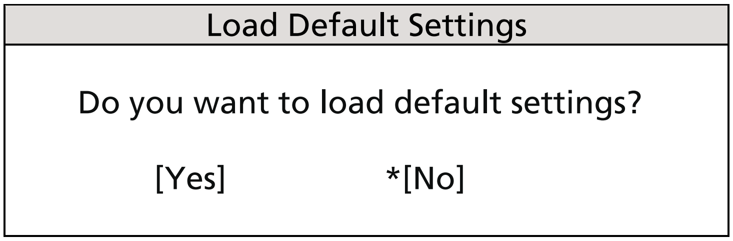
```
                    Chipset Options
  CAS Latency.......................................... [2]
  Refresh Rate/Type................................... [15.6]
  Maximum Pages Open .............................. [32]
  Memory Address/Control Buffer Select................ [Disabled]
  Memory Data Buffer Select.......................... [Enabled]
```

Parameter	**Description**	**Option**
CAS Latency		
Refresh Rate/ Type		
Maximum Pages Open		
Memory Address/ Control Buffer Select		**Disabled** Enabled
Memory Data Buffer Select		**Enabled** Disabled

Load Default Settings

Use this option to load the default settings for optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed parameters are not user-configurable.

The following dialog box appears when you select **Load Default Settings** from the main menu:



Load Default Settings

Do you want to load default settings?

Select **Yes** to load the default settings.

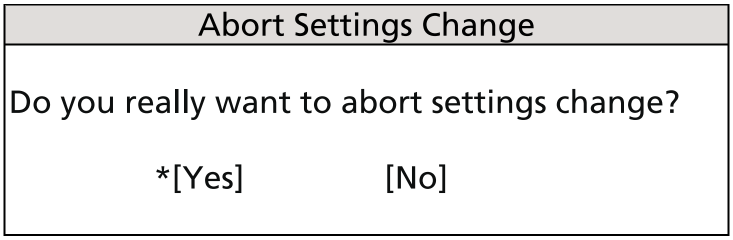
Select **No** to ignore the message and return to the BIOS Setup utility main menu.

(*) Indicates default selection.

Abort Settings Change

Use this option to disregard the changes you have made to BIOS and reload your previous settings.

The following dialog box appears when you select **Abort Settings Change** from the main menu:



Abort Settings Change

Do you really want to abort settings change?

*[Yes] [No]

Select **Yes** to disregard your changes and reload your previous settings. After reload, the main menu appears on the screen.

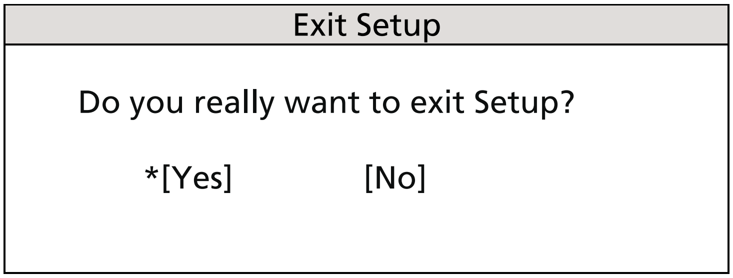
Select **No** to ignore the message and return to the BIOS Setup utility main menu.

(*) Indicates default selection.

Exit Setup

Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

Press the **Esc** key to leave Setup. The following dialog box appears:



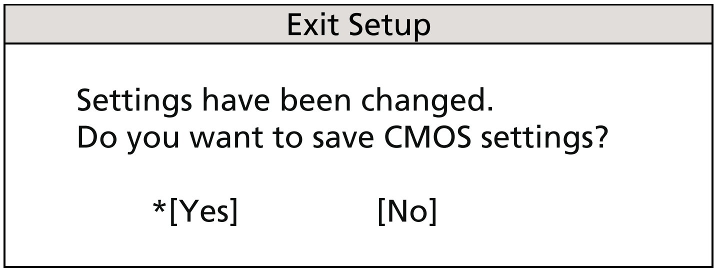
Exit Setup

Do you really want to exit Setup?

*[Yes] [No]

Use the arrow keys to select your response. Press the **Enter** key.

If you made any changes to the Setup utility, the dialog box below is displayed.



Exit Setup

Settings have been changed.
Do you want to save CMOS settings?

*[Yes] [No]

Use the arrow keys to select your response.

Select **Yes** to save the changes in CMOS.

Select **No** to retain the previous configuration values.

Press the **Enter** key to exit.

Appendix A: ASM Pro quick installation guide

This appendix shows you how to set up ASM Pro and its agent software.

Installing ASM Pro

System requirements

ASM Pro Console

- Intel Pentium or higher processor
- 64 MB of RAM (128 MB recommended)
- 20 MB free hard disk space
- Microsoft Windows 98, Windows NT, or Windows 2000 operating system
- Ethernet card
- Modem

ASM Pro Server Agent

- Intel Pentium or higher processor
- 64 MB of RAM (128 MB recommended)
- 20 MB free hard disk space
- Novell NetWare, SCO OpenServer, SCO UnixWare, Linux RedHat, Microsoft Windows NT, or Windows 2000 operating system
- Ethernet card
- Modem (optional for RAS/OOB[1])

System setup

Make sure that your computer meets the system requirements before proceeding. You may also want to change your screen to 800 x 600 resolution or higher for optimum viewing.

---

[1] RAS (Remote Access Services) and OOB (Out-of-Band)

Installing ASM Pro Console

To install ASM Pro Console:

1 Insert the Management CD into your system's CD-ROM drive.

2 Click the **Applications** button.

3 In the Applications list, select **Advanced System Manager (ASM) Pro Console V4.5**.

4 Click the **Setup** button.

5 Follow the Installation Wizard.

6 Click **Finish** to complete the installation.

Note: Remember to remove all diskettes or CDs from the drives before rebooting the system.

Installing ASM Pro Server Agent

ASM Pro Server Agent can be installed on four different operating systems. The installation diskette contains the installation files for the following operating systems:

- Novell NetWare 5.0, 5.1
- SCO OpenServer 5.06
- SCO Unixware 7.1
- Microsoft Windows NT 4.0 Server
- Linux RedHat 6.2, 7.0
- Microsoft Windows 2000 (Server and Advanced Server with SP1, SP2)

Installing the Novell NetWare Server Agent

Note: Make sure the SNMP (Simple Network Management Protocol) is configured properly.

ASM Pro Server Agent requires SNMP.NLM running with *Control Community set to* '*public*' to allow ASM Pro Console to communicate with ASM Pro Server Agent.

ASMAGENT.NCF is the script file that loads all related modules of ASM Pro Server Agent. To load the SNMP use the following command:

```
load snmp control=public
```

If you load SNMP.NLM before ASM Pro Server Agent, make sure that the Control Community has been set up properly. For more information, please refer to related documents about the SNMP Agent for NetWare (NetWare SNMP).

Check AUTOEXEC.NCF to see if you have loaded SNMP. Notice that because of the auto loading feature of NLM, you can not directly find where SNMP is loaded. The most common module is TCPIP.NLM which auto loads SNMP.NLM. If you are using TCP/IP, load SNMP by using the command line *load snmp control=public* before loading TCPIP.

For NetWare 4.x and Netware 5.x users, if you are using INETCFG.NLM to configure the network, be sure to configure SNMP and make sure that the SNMP.NLM is running with *Control Community set to 'public'*.

To install the Novell NetWare Server Agent:

1 Insert the Management CD into your system's CD-ROM.

2 At Netware server console, type:

```
load cdrom.
```

3 At Netware server console,type:

```
load EB450MgmtCD:\APP\ASM\Netware\setup.
```

4 You are asked if you want to install the ASM Pro Server Agent on your system. Select **Yes** to install.

The setup program detects the NetWare version and the model of the server. It copies related NLM files into the SYS: SYSTEM directory and C: of your NetWare server, and some needed command lines are added into AUTOEXEC.NCF in SYS: SYSTEM.

5 If the Mylex GAM driver and GAM service is installed in your NetWare system, the setup program asks you to install the Bbp agent.

6 Press any key to continue. The ASM Pro Server Agent Configuration Utility is launched.

7 The **Password** option is highlighted. Set up a password, and exit the utility.

Note: A password is required when using the ASM Pro Console to remotely change or set any values for the agent, such as threshold values and any trap handling method. If the password is disabled, there is no security protection for the agent when the Console tries to change or set these values.

8 Reboot the system to activate the ASM Pro drivers.

Note: ASM Pro Server Agent automatically starts after the server is restarted and running.

Installing the SCO OpenServer Agent

Note: Make sure the SNMP (Simple Network Management Protocol) is configured properly.

ASM Pro Server Agent requires SNMP running with *community set to* '*public*' . The IP address of ASM Pro Console should be in */etc/snmpd.trap* so that ASM Pro Console can communicate with ASM Pro Server Agent.

Follow these steps to install the SCO Server Agent:

1 Insert the Management CD into your system's CD-ROM drive.

2 Login SCO OpenServer as a super user.

3 In shell prompt, type the following to mount CD-ROM:

```
mount /dev/cd0 /mnt/cd.
```

4 In shell prompt, type:

```
ln -s  /mnt/cd/APP/ASM/SCOOPE~1/ASMIPMI.DD /tmp/OL.000.000.
```

5 In shell prompt, type:

```
custom.
```

6 Follows custom command UI, select **Software** -> **Install New** -> **From ...** -> **Media Images** -> **/tmp**.

Note: If the SCO Server Agent has been installed, the program asks if you want to preserve the existing config file. Choose **Reinstall** to overwrite the previously installed SCO Server Agent, or choose **Upgrade** if you know the existing password.

7 A password is required for a new installation. The system prompts you to enter a new password, and after you have entered it once, prompts you to reenter it.

8 After you set up the password, select the **SNMP_Config** option, and enter the IP address of the ASM Pro Console system. (You can run asmconfig at a later time to add or change the ASM Pro Console IP address. See the ASM Pro Server Agent Utilities chapter in the ASM Pro manual for information about running asmconfig.)

Note: If the SCO Server Agent has been installed, target IP addresses appear on this screen.

9 After the installation is complete, in shell prompt, type:

```
rm /tmp/VOL.000.000.
```

Configuring ASM Pro Server Agent for SCO OpenServer

You may disable the password if you are installing ASM Pro Server Agent to use only UPS (Uninterruptible Power Supply) or RDM functions.

You can use the asmconfig utility to set up a password for the agent. A password is required when you are using ASM Pro Console to remotely change or set any values for the agent.

Refer to the ASM Pro Server Agent Utilities chapter in the ASM Pro manual for instructions on how to use the asmconfig utility.

Installing the SCO UnixWare Server Agent

Note: All of the following procedures require root permission.

To install the SCO UnixWare Server Agent:

1 Prepare the ASM Pro installation diskette from the DD file on the ASM Pro package CD-ROM.

2. Mount the CD-ROM drive. For example, mount the CD-ROM to /mnt.
3. Insert an empty 1.44-MB diskette into your floppy drive and execute the command:

   ```
   # dd if={PATH}/asmuw.dd of=/dev/rdsk/f03ht
   ```

   Here, {PATH} denotes the directory where asmuw.dd is located. For example, /mnt/UnixWare.
4. Insert the ASM Pro installation diskette into your floppy drive and, at the shell prompt, execute this command to begin ASM Pro installation:

   ```
   # pkgadd -d diskette1 asm
   ```

The installation process copies the ASM Pro Server Agent package into the /usr/asm directory, and automatically makes changes to the following system configuration files:

```
/etc/netmgt/snmpd.comm
/etc/netmgt/snmpd.peers
/etc/inittab
```

After the installation is complete, ASM Pro Server Agent can be manually started by executing the command:

```
# /usr/asm/asmsmuxd
```

or it will be automatically started on the next system reboot.

Note: Before starting ASM Pro SMUX Agent asmsmuxd, execute the ASM Pro Agent Configuration Utility asmcfg to configure at least "SNMP", "ASM Pro_Password" and other parameters. Refer to “Chapter 4 - ASM Pro Server Agent Utilities” in the ASM Pro manual for detailed instructions on using the ASM Pro Configuration Utility.

Installing the Microsoft Windows NT V4.0 Server or Windows 2000 Server/Advanced Server Agent

Note: Before installing the ASM Pro software, make sure that the TCP/IP and its related SNMP service are installed on the server.

To install Microsoft Windows NT V4.0 Server or Windows 2000 Server/ Advanced Server Agent :

1 Insert the Management CD into your system’s CD-ROM drive.
2 Click the **Applications** button.
3 In the Applications list, select "**Advanced System Manager (ASM) Pro Agent V4.50**".
4 Click the **Setup** button.
5 Follow the onscreen installation steps to complete the installation.
6 Verify the path (where the ASM Pro Agent will be installed to) and click **OK**. The Welcome screen appears.
7 Click **Next**. You are asked to stop SNMP service.
8 Click **Yes**. You are prompted to choose a destination directory. If you only want to install ASM Pro SNMP agent and Remote Console, you can choose **Typical**. If you want to choose more components, click **Custom**. There are five components in the ASM Pro agent:

    - SNMP agent
    - DMI

      ASM Pro agent defines a proprietary ASM Pro.MIF that supports the same items as the SNMP agent.

    - Server Mif

      The server.mif that is defined by DMTF will be installed.

    - Remote Console

      The Remote Console Server is installed which can be remote control by Remote Console Client

    - MMC

      This component is only supported on Windows 2000 and is integrated with the Microsoft Mangement Console.

9 Click **Next** for the default directory, or click **Browse** to define your own destination directory. Check any components you want to install, and click **OK**.

    The asmcfg utility launches automatically.

    You may skip steps 7 through 11 if you are installing ASM Pro Server Agent solely for the purpose of utilizing UPS and/or RDM functions.

10. Enter a password and click **OK**. A password is required when using the ASM Pro Console to remotely change or set any value for the NT Agent. If the password is disabled, there is no security protection for the agent when the ASM Pro Console tries to change or set these values.
11. Enter the IP address of the ASM Pro Console system, then click **ADD** to add trap destinations. Click **OK** to end the asmcfg utility. This IP address tells the Agent where to report (trap).
12. Click **Yes** to save your changes. The View Readme File dialog box appears.
13. Click **Yes** to view, **No** to continue.
14. Click **Finish** to exit setup.

Installing the RedHat Linux Server Agent

Follow these steps to install the Red Hat Linux Agent:

1. Insert the Management CD into your system's CD-ROM drive.
2. Login Linux server as a super user.
3. In shell prompt, type the following to mount CD-ROM:

```
mount /dev/hdX /mnt/cdrom.
```

4. In shell prompt, type the following to change to the new directory:

```
cd /mnt/cdrom/App/ASM/Linux.
```

5. In shell prompt, type the following to install ASM Pro SNMP agent:

```
/bin/rpm -i asmpro-agent-4.5-4.rh62.i386.rpm.
```

6. In shell prompt, type the following to configure "SNMP_Config" to receive trap:

```
/usr/local/share/asm/asmcfg.
```

7. In shell prompt, type the following to start ASM Pro agent:

```
/usr/local/share/asm/asm-snmpd start.
```

8. In shell prompt, type the following to stop ASM Pro agent if necessary:

```
/usr/local/share/asm/asm-snmpd stop.
```

Installing RDM

This section gives step-by-step instructions on how to install the RDM function in the agent and console side of the ASM Pro software.

System requirements

Before you begin the installation, make sure that you have the following:

RDM server requirements

Hardware

- External modem
- Pager

Software

- Novell NetWare v4.1 or later, and/or
- SCO OpenServer 5.0 or later, and/or
- Microsoft Windows NT 4.0 or later, and/or
- SCO UnixWare 7.0 or later
- RedHat Linux 6.2 or 7.1
- ASM Pro (Advanced System Manager Pro) agent

RDM Console requirements

Hardware

- Pentium or faster PC
- At least 16 MB RAM
- At least 5 MB free hard disk space
- Modem

Software

- Microsoft Windows 98, Microsoft NT Workstation 4.0, or Windows 2000
- ASM Pro 4.5 Console

Connecting communication peripherals

Modem

The Server and the RDM Console communicate via modem protocol. Therefore, you need to connect an external modem with a baud rate of not less than 9600 baud to both systems. To connect an external modem, connect the RS232C serial cable to the modem data port and the appropriate COM port of the system.

Note: Use only modems that are purchased locally to ensure compatibility with your telephone system. The modem must have a transfer rate of at least 28.8K.

When the modem is turned ON, the CD/DCD (Carrier Detect/Data Carrier Detect) signal light on the front panel must be OFF for RDM to function properly. If this is not the case, refer to the modem's user's guide and check the section on DIP switches for information on how to adjust the CD/DCD light. If your modem does not have a DIP switch, then we recommend that you replace it with another model that supports such switches.

Telephone

To connect the modem to a telephone outlet, plug in the telephone connector to the telephone outlet. Then, insert the telephone line connector to the modem line port.

Pager

The pager is necessary for notification purposes only.

Post-installation instructions.

- Make sure the modem cables are properly connected.

- Turn on the system and the peripherals connected to it.

Installing RDM Utilities

You must do the following to ensure successful installation of the RDM Utilities:

1. If you have created a RDM hidden partition through EasyBuild System CD, skip step 2.
2. Create a RDM hidden partition.

   The RDM hidden partition is a DOS partition on the hard disk that allows you to run preinstalled diagnostic tools when necessary, without using a diskette or a CD. It also allows you to access your system from a remote RDM console.

   To create a RDM hidden partition, do the following:

   a. Prepare a "clean" hard disk, i.e., a hard disk without any operating system installed on it.
   b. Create a bootable RDM floppy diskette using the Management CD of EasyBuild.
   c. Insert the RDM floppy diskette into the floppy drive.
   d. After booting from the floppy drive, use the DOS FDISK command to create a DOS partition. The minimum partition size is 33 MB.
   e. Activate the partition and exit FDISK; then reboot the system.
   f. Format the DOS partition. When formatting is completed, label the partition as RDM for easy identification.
   g. Install (or transfer) the DOS operating system to the partition.
   h. Run \RDM\install.bat* from the RDM floppy diskette to install the RDM driver and hide the RDM partition. These settings will take effect only after you reboot the system.

      After you create the hidden partition, you can now install other operating systems on the same hard disk. But before doing so, make sure that the Hidden Partition parameter in the RDM BIOS is set to Disabled. For more information on RDM BIOS, refer to RDM BIOS chapter of the ASM Pro manual.

Important: If you are using an IDE hard disk with a capacity less than 540 MB, make sure that you disable the LBA mode. Otherwise, you will be required to use the LBA mode that you set for the other operating systems when you create the RDM hidden partition.

Note: When you boot the system to the hidden partition, you cannot use other utilities (e.g., FDISK.EXE) to change the hidden partition settings.

Deleting the hidden partition

Important: You cannot recreate the RDM hidden partition once you delete it. Before proceeding, make sure that you will not need to create a hidden partition in the future.

Follow these steps to delete the hidden partition:

a Insert a bootable diskette into the floppy drive.

b Enter the BIOS Setup and set the Hidden Partition parameter in the RDM BIOS to Enabled.

c After the system boots from the floppy drive, use FDISK to delete the RDM hidden partition. Do not delete other partitions or change or reformat the active partition.

d Exit FDISK and reboot the system.

e Enter the BIOS Setup and set the Hidden Partition parameter in the RDM BIOS to Disabled.

3 Install an operating system.

RDM supports the following operating systems:

- Novell NetWare
- Microsoft Windows NT and Windows 2000
- SCO OpenServer
- SCO UnixWare
- RedHat Linux

You can install any or all of the operating systems. For the installation instructions, refer to the documentation that came with the OS package.

4 Install the ASM Pro Server Agent.

Note: Before you proceed, make sure that you have installed the necessary components and peripherals, for both the RDM server and RDM Console.

The ASM Pro Server Agent driver or the server driver is contained in the Advanced System Manager Pro (ASM Pro) software package. Therefore, to install the ASM Pro Server Agent driver, you need to install the ASM Pro agent software. For information on how to install the ASM Pro software, refer to the documentation that comes with the ASM Pro package.

RDM Console setup

This section describes how to install and uninstall the RDM Console software.

Installing the RDM Console software

Important: Before you proceed, make sure that you have installed the necessary components and peripherals, both for the RDM server and RDM console.

Note: The RDM Console software can be installed only under Windows NT 4.0/Workstation or Windows 95/98/2000.

The RDM function is one component of the ASM Pro 4.5 Console software.

Follow these steps to install the RDM Console software:

1. Turn on the system.
2. Turn on all peripherals connected to the system such as the monitor, modem, etc.
3. Install ASM Pro Console. Run the installation program, i.e., SETUP.EXE. The Setup Program Welcome screen appears.
4. For typical installation in ASM Pro Console, the RDM Console will be installed. In Custom mode, user can choose to install RDM Console or not.

5 Continue to finish the installation of ASM Pro Console.

Uninstalling the RDM Console software

RDM Console software can only be uninstalled within ASM Pro Console package.

Installing AWM and Microsoft Internet Information Service (IIS)

Note: You have to install Microsoft IIS before installing AWM. If your system already have Microsoft IIS installed then AWM automatically configures IIS. Skip the “Setting up Microsoft IIS” section if this is the case.

System requirements

- Intel 486 or higher processor
- 64 MB of RAM
- 10 MB free hard disk space
- Windows NT Server 4.0 or Windows 2000 with the following:
  - Microsoft Internet Information Server 2.0 or later (5.0 is recommended)
  - Microsoft Active Server Pages (ASP)
  - SNMP Service
- Ethernet card
- Modem

Installing AWM

Note: AWM and ASM Console can not be installed in the same system.

To install AWM:

1. Insert the Management CD into your system’s CD-ROM drive.
2. Click the **Applications** button.
3. In the Applications list, select **ASM Pro Web-based Manager V4.50 (AWM)**.
4. Click the **Setup** button.
5. Follow the Installation Wizard.

6 Click **Finish** to complete the installation.

Note: For Windows NT 4.0, AWM will automatically install WbEM core or WbEM SNMP Provider if not installed. For Windows 2000, the WbEM core is built-in. AWM will only install the WbEM SNMP Provider if it is not yet installed. After installing either of these components, reboot your system.

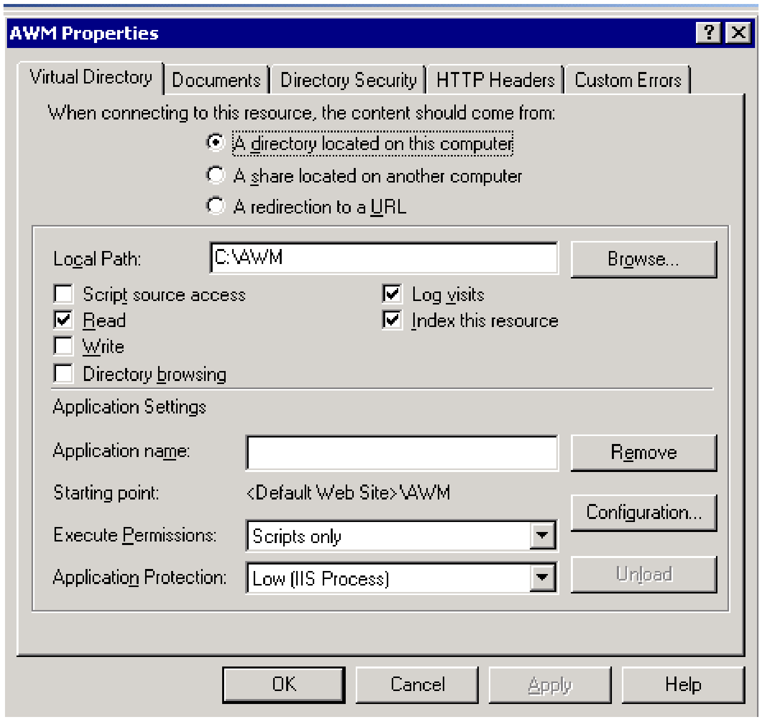
Setting up Microsoft IIS

To set up Microsoft IIS:

1 Open your IIS configuration program and check the virtual directory setting. The IIS setup program is located in the Windows NT Server Optional CD. You can also download it from the Microsoft Website.

2 Check the virtual directory. If there is no virtual directory for AWM, create one and name it AWM. Point it to the directory where the AWM main files are installed (e.g. D:/AWM).

Note: If you have IIS version 5.0 the directory is automatically added.


AWM Properties
Virtual Directory
Documents
Directory Security
HTTP Headers
Custom Errors
Browse...
Remove
Configuration...
Unload
OK
Cancel
Apply
Help

When connecting to this resource, the content should come from:

● A directory located on this computer
○ A share located on another computer
○ A redirection to a URL

Local Path: C:\AWM

☐ Script source access
☑ Read
☐ Write
☐ Directory browsing
☑ Log visits
☑ Index this resource

Application Settings

Application name:

Starting point: <Default Web Site>\AWM

Execute Permissions: Scripts only

Application Protection: Low (IIS Process)

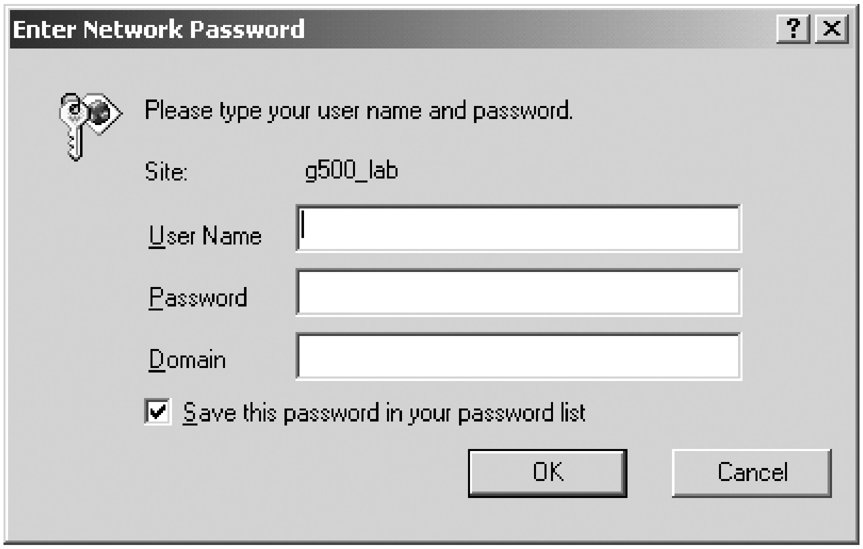
3 After adding the virtual directory, click **OK** to save changes and exit.

Running AWM

Type this address in your browser:

http://{IPADDRESS}/AWM

The password window appears prompting for authentication as shown below.



Enter Network Password
?
×
User Name
Password
Domain
OK
Cancel

Please type your user name and password.

Site: g500_lab

☑ Save this password in your password list

To access AWM, enter your user name, password and domain, then click **OK**.

AWM confirms the user name, password and domain, then displays the main page.

Appendix B: System rack installation guide

ESD precautions

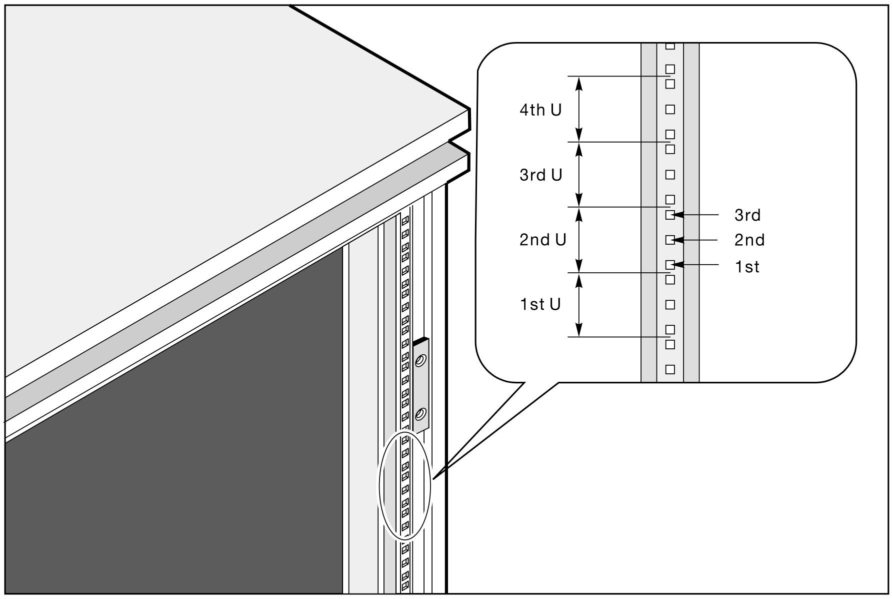
Always observe the following electrostatic discharge (ESD) precautions before installing a system component:

1. Do not remove a component from its antistatic packaging until you are ready to install it.
2. Wear a wrist grounding strap before handling electronic components. Wrist grounding straps are available at most electronic component stores.

Note: Do not attempt the procedures described in the following sections unless you are a qualified technician.

Vertical mounting hole pattern

The four vertical rails of the system rack contain mounting holes arranged in a manner shown in the figure below:



The system occupies 1U in the rack. Count the U positions and hole numbers from the bottom up.

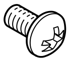
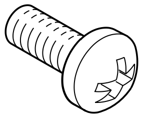
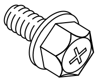
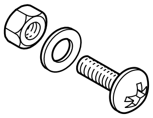
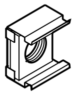
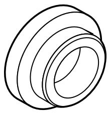
Note: The unit of measurement used in this document is "U" (1U = 1.75 inches or 44.45 mm). The total sum of the heights of all components in the rack measured in "U" cannot exceed the height of the rack. For more information, please refer to the rack's documentation.

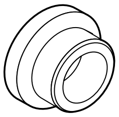
The distance from the center of two holes with closer spacing to the center of the next pair is equivalent to 1U.

When installing components, you must start your measurement from the center of the two holes with closer spacing. Otherwise, the screw holes on the component may not match those on the rack.

Screw types used

The following screws are used in the assembly of the Acer Altos R500 system and bundled rack-mountable components:

Screw type and part number	Figure	Usage
M3 x L6 86.5A524.6R0		Securing the front panel to the system
M4 x L5 86.6A536.8R0		Securing the component rails to the system
M6 x L10 86.6A52A.100		1. Securing the cable carrier and the mounting brackets to the rack 2. Securing the system to the rack
#6-32 x 1/4” 86.BA226.016		1. Securing the cable carrier bracket to the system 2. Securing the cable carrrier to the cable carrier bracket
M4 x L8 86.6A536.8R0 Washer 88.21341.805 Nut 87.11042.670		Securing the mounting brackets to the mounting rails
Cage nut		Supports the M6 metal screws for securing system components to the rack
Locating ring for Knurr rack 34.94815.001		Supports the M6 metal screws for securing system components to the Knurr rack

Screw type and part number	Figure	Usage
Locating ring for Rittal rack 34.94814.001		Supports the M6 metal screws for securing system components to the Rittal rack

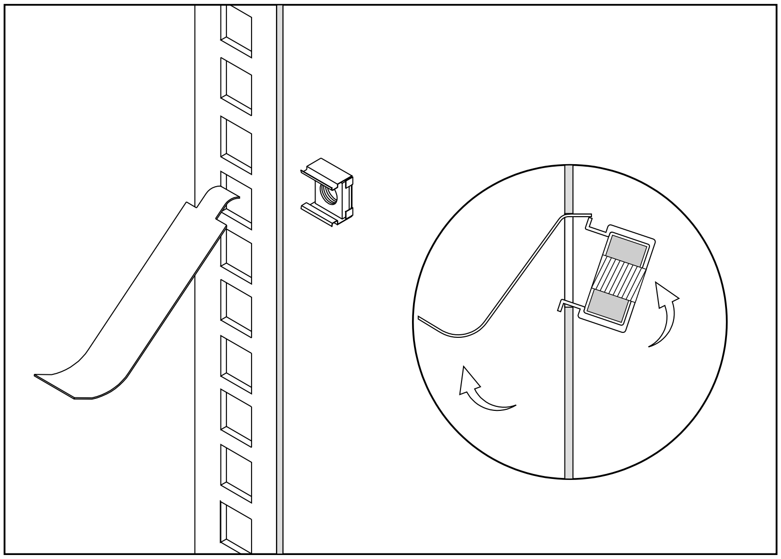
Installing cage nuts

Cage nuts are use to secure systems and other components to the vertical rails in the rack.

To install cage nuts:

1 Insert the lower lip of the cage nut over the bottom of the opening at the back of a rail.

2 Insert the small end of the cage-nut installation tool through the opening in front of the rail and hook the tool over the top lip of the cage nut as shown below.



3 Push in the cage nut while rotating the tool up and pulling the tool back toward you until the top lip of the cage nut snaps into position.

4 Repeat this process to install the other cage nuts in their appropriate locations.

Installing the system into the rack

Follow steps 1 to 4 below to install the mounting rails to the rackmount. The mounting rails allow the system to slide in and out of the rackmount for maintenance purposes.

1 Extend the component rail (a) from the mounting rail (b) until the component rail release latch clicks. Hold down the latch and slip the component rail out of the mounting rail. Do the same thing to the other mounting rail.

Note: Each mounting rail consists of a fixed outer piece that screws onto the mounting bracket and an inner sliding piece controlled by a steel ball gearing movement. This inner sliding piece is not detachable.

2 Put the component rails aside.

3 Attach the mounting brackets to the mounting rails.

The mounting brackets consists of two metal bars that are to be attached on both ends of the mounting rails.

f Attach the mounting bracket to the front end of the mounting rail and align the screw holes.

Note: Look for an imprint that says “front” or “rear” on the mounting bracket. Install the mounting bracket on the appropriate side; otherwise, it will not fit correctly into the rack.

g Secure it with three M4xL8 screws with nut and washer as shown below. Slide and adjust the inner piece of the mounting rail to gain access to the screw holes. The position of the mounting bracket on this end is fixed.

h Extend the inner sliding piece of the mounting rail until you can see the screw holes on the other end. Attach the mounting bracket to the rear end and secure it with two M4xL8 screws. The mounting rail on this end is adjustable.

4. Attach the mounting brackets and the cable carrier to the rack with nine M6xL10 screws.

Note: You need to insert the locating ring into the rack mount hole first before securing the mounting bracket with the screws. Refer to the next figure.

a. Install the left mounting bracket first using four M6xL10 screws with four locating rings.

Note: The system occupies 1U location. Count the U positions and hole numbers from the bottom up. Secure the mounting bracket on the 1st and the 2nd holes of the 1st U using four M6 screws. Make sure that both mounting brackets are at the same level. Take note of the vertical rail hole pattern. See “Vertical mounting hole pattern” on page 119.

b. Install the right mounting bracket with the cable carrier using five M6xL10 screws. The cable carrier is installed between the mounting bracket and the vertical rail of the rack as shown below.

Note: The cable carrier allows you to tie-wrap all cables to and from the system. As you slide the system in and out of the rack, the cable carrier collapses and extends, keeping the cables untangled and attached to the system.

Follow steps 5 to 11 below to install the system to the rack:

5 Secure the front panel to the system with three M3xL6 screws.

6 Attach the component rails to the system with eight M4xL5 screws.

7 Extend the inner sliding piece of the mounting bracket.

8 Slide the system into the rack.

9 Attach the cable carrier bracket to the rear of the system using two #6-32x1/4” screws.

Attach the cable carrier to the cable carrier bracket using three #6-32x1/4” screws.

10 Pull out the system to extend the cable carrier. Bundle all cables to the cable carrier with the cable straps. Route all cables from the cable carrier to the cable management bracket located on the rear of the rack.

11 Install two cage nuts (see page 121) and secure the system to the rack using two M6xL10 screws.

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